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The experience of France has shown that old units never entirely disappear and the metric units introduce complication, resulting from a dual system. It is hardly necessary to point out how vitally the railroads would be affected if the use of metric weights and measures by all departments of the government were made compulsory. In all reports to the Interstate Commerce Commission the units would have to be changed from miles to kilometers, from pounds to kilograms, from ton-miles to metric ton-kilometers, etc. The cost of this work would be appalling in its magnitude and the benefits would be infinitesimal in comparison with the confusion and complexity that would result. When it is considered that the system was made compulsory in France when modern organized manufacture had scarcely begun and yet its complete adoption has not been accomplished after 112 years, it will be realized that the railroads would do well to oppose this proposed legislation.

Railroad Bill Reported

THE TEXT of the railroad bill as reported to Congress this week and published elsewhere in this issue contains many important modifications from the original bills passed by the Senate and the House, the principal points of which have been announced before, except the labor provisions which were re-written on Monday at the suggestion of Director General Hines for the purpose of making them more workable and applicable to the present situation. However, the exact language used is of the greatest importance and the making public of the text reveals many features of the plan of the bill which have not been clearly understood or which have been decided by the conferees only within a few days.

The rate-making rule, which is based on Section 6 of the Cummins bill, but is now contained in Section 422, represents a much greater degree of flexibility than the original provisions, which were such that most people have erroneously referred to it as providing for a "guaranty" of 5½ per cent. While the original bill fixed the percentage and provided that the Interstate Commerce Commission should readjust it every five years the bill now states that the commission "shall from time to time determine and make public what percentage constitutes a fair return" and the 5½ per cent fixed by the bill is stated in a proviso. This serves to emphasize the fact that the commission is after all made the arbiter of the destinies of the railroads because not only is it to determine the value to which the percentage is to be applied but the entire section is filled with qualifications which refer back to the judgment of the commission.

It is understood that for a time the conferees proposed to state that the property investment accounts should be taken temporarily as the basis of value but in the final text the commission is authorized to utilize the results of its investigation under the valuation act, "in so far as deemed by it available" and to "give due consideration to all the elements of value recognized by the law of the land for rate-making purposes" and to "give the property investment account of the carriers only that consideration which under the law it is entitled to in establishing value for rate-making purposes." It is also left discretionary with the commission as to whether or not it shall state the percentage by rate groups or for the carriers as a whole.

There is also another opportunity for the exercise of judgment by the commission as given in the factors which it is to take into consideration in estimating what rates will produce a given percentage, such as what is "honest, effi-

cient and economical management" and "reasonable" expenditures for maintenance.

For the purpose of determining which railroads earn over 6 per cent and therefore will be required to contribute half of the excess to the general railroad contingent fund computations are to be based on the railroad systems under common control and management, irrespective of the accounting returns of the various parts of such system.

The guaranty to the railroads for six months of half of a year's standard return is also qualified in several ways. It is not to be available to a road that does not by March 15 file an acceptance of the provisions of the bill, which include one that any excess above the guaranty shall be paid to the government, and the Interstate Commerce Commission is directed to require the restatement of accounts other than the maintenance accounts to correct any disproportionate or unreasonable charge and there shall not be included in operating expenses for maintenance more than an amount fixed by the commission, which shall so far as practicable apply the rule set forth in the standard contracts, which bases the upkeep during federal control on the expenditures of the test period after equating for increases in prices and wages. Special provision is made for the short line railroads not taken over or relinquished from federal control.

The provisions relating to the funding of carriers' indebtedness to the government have been considerably revised and now provide that the indebtedness of the government to the carriers may be deducted "so far as deemed wise by the President" but only to the extent permitted under the compensation contracts and there is a proviso that gives the carriers enough of their rental to pay interest, taxes and other corporate expenses, regular dividends and one twenty-fourth of last year's operating expenses for working capital. To assist the President in making settlement on this basis he is given an additional appropriation of \$200,000,000.

Present rates are safeguarded against arbitrary reductions by state authorities by a provision that they shall not be reduced for six months unless such reduction is approved by the Interstate Commerce Commission.

The labor provisions as redrafted are very much like the plan originally proposed by the Association of Railway Executives. Whereas it was intended by the conferees to create several boards of adjustment for various classes of employees it was finally decided to leave such boards to be established by agreement between carriers and representatives of the employees or subordinate officials on a purely voluntary basis and to avoid the possibility of different boards rendering different treatment to different classes of employees most of the jurisdiction over wages is conferred on the Railroad Labor Board which will have headquarters at Chicago. The powers of this board are such as to create practically a plan of compulsory arbitration but without a penalty to enforce it. An interesting provision is that which prevents any reduction of wages fixed by the Railroad Administration for six months, which is also the period during which the railroads are guaranteed.

The bulk of the bill is made up of amendments to the Interstate Commerce Act which greatly increase the powers and duties of the Interstate Commerce Commission along lines which have long been urged by the railroad officers, shippers and the commission itself, although the changes which these three have urged are not all the same. The commission may approve consolidations proposed by the carriers but it is required to prepare a plan for the consolidation of the railways of the continental United States into a limited number of systems, preserving competition as fully as possible and maintaining existing routes and channels of trade and commerce wherever practicable. Consolidations made must be in harmony with this plan but it may be changed from time to time.

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Section 501 of the bill again extends the effective date of the provisions of Section 10 of the Clayton act, relating to railroad transactions with persons or companies with which they have an interlocking interest, until January 1, 1921.

The provision authorizing the commission to require the installation of automatic train control devices has been changed to require at least two years' notice instead of one year.

The provisions for representation of labor organizations on railroad directorates have been eliminated.

Transportation Conditions Are Extremely Bad

STATISTICS regarding "car shortage" and information regarding conditions generally in the country indicate that with the return of the railways to private operation less than 10 days away, the transportation situation in the United States is the worst that it ever was, except possibly in the winter of 1917-1918, at the time when government operation of railroads was adopted. The net car shortage on January 31, 1920, was 88,200. This compares with a net shortage of 90,000 on January 31, 1918, and 98,000 on February 1, 1918.

The accumulations of cars under load at various points of congestion on February 6, 1920, amounted to 117,000 as compared with 150,000 when government operation was adopted.

It is well, in this connection, to recall the conditions which existed in the winter of 1917-18. The weather was the worst in its effect on transportation ever known. Not only was it extremely cold, but the snowfall was enormous, and heavy snow extended farther south and therefore affected more railway lines than for many years. The traffic being handled was the heaviest ever known. The difficulties of handling it had been greatly increased by the concentration by the government of enormous orders for war materials in a comparatively small area in the eastern states, and by orders for preference to be given to government freight being abused to such an extent that 80 per cent of the freight of some of the eastern lines was being handled under preference orders. Government operation was adopted upon the ground that it was necessary in order to remedy these conditions, but the car shortage continued to grow until on March 1, 1918, it amounted to 138,000 cars.

The railways recently have been struggling with very bad weather conditions. The temperature has been low and the eastern states recently have been visited by a blizzard and snowfall only less severe than the storms of 1917-18. It cannot be said, however, that the weather conditions generally have been as bad as they were two years ago. The coal strike in November and December demoralized traffic and the effects of it are still being felt, but even the coal strike has been hardly as demoralizing as were the government priority and preference orders of two years ago. In the winter of 1917, before government operation was adopted, the railways had been forced to put out many embargoes, but they did not, and could not, use the permit and embargo systems to anything like the extent that the Railroad Administration recently has been using them. The extensive use of permits and embargoes has helped the Railroad Administration in two ways. First, it has enabled it to refuse to try to load freight which railway officers knew could not be taken without increasing the congestion. Second, it has tended to keep down the car shortage figures, because when concerns making a particular class of commodities know that their commodities have been embargoed, they usually cease to place orders for cars until the embargoes have been lifted. If, therefore, the Railroad Ad-

ministration had not been able to use the permit and embargo systems as it has, the car shortages and the accumulations of cars reported undoubtedly would be larger than they are. In one important respect the situation probably is much worse now than it was two years ago. The amount of freight seeking transportation which the railways are unable to accept for movement undoubtedly is vastly larger than it was then.

Just before and after government operation was adopted, it was charged all over the country that the railways under private management had "broken down." If that charge could be fairly made then, the charge may be as truly made now that under government operation they have "broken down." As a matter of fact, under both private and government operation the managements have shown great ability and energy in dealing with difficult and almost impossible conditions. The government, however, is not handing the railways back under transportation conditions any better than they were when they took the roads over, and the inability of the railways to handle the entire commerce of the country unquestionably is much greater than it was when government operation was adopted.

As figures already given indicate, the car shortage continued to increase after the roads were taken over by the government and amounted on March 1 to almost 140,000 cars.

Conditions also probably have grown worse since February 1, 1920, although statistics are not available to show that this is the case. It will be surprising if the statistics for March 1 do not show a car shortage greatly exceeding that which existed on February 1.

The present shortage of cars exists in spite of the fact that the railways recently have handled more traffic than they ever did before at the same time of the year. The amount of anthracite coal moved in December broke all records, and the amount of bituminous coal moved in January broke all records. The total freight handled in December declined owing to the coal strike, but in January and in the first week in February the total freight traffic handled exceeded all past records.

The present transportation conditions are not due to the fact that the railways are not handling more traffic than ever before at this time of the year, but to the fact that there is more traffic to handle than there ever was, and that the facilities for moving it are more inadequate than they ever were.

New Books

Commodity Classification. Compiled by the Railway Accounting Officers' Association. E. R. Woodson, secretary, 1116 Woodward Bldg., Washington, D. C.

The Interstate Commerce Commission has ordered that beginning January 1, 1920, Class I and II railways shall report to the Commission quarterly and yearly the tonnage of commodities carried, divided among 70 classes. A sub-committee of the Railway Accounting Officers' Association's Committee on Freight Accounts has prepared a list of commodities arranged under this classification. This has been published in pamphlet form by the association. There are about 3,000 connections listed alphabetically, with the classification number opposite each. The pamphlet also contains a list of these commodities arranged according to their classification. This is in the nature of an official interpretation of the Interstate Commerce Commission's rules and has been made standard by the Accounting Officers' Association. The work is quite comprehensive and the book will be a necessity to all accounting officers dealing with the subject; it will also be useful to station agents and operating and traffic men generally.

Letters to the Editor

Common Sense in Naming Stations

PORLAND, Ore.

To THE EDITOR:

Frequently but little attention is given to the matter of station names. Names are often selected that are inappropriate and confusing, sometimes duplicating names that already exist on the same railroad or in the same state on another line. This should be avoided. There is a general tendency for the better in these matters, however, and some companies are beginning to give the selection of station names more attention, co-operating with various state and federal officers that are interested in the same work.

The final authority on geographical names in this country is the United States Geographic Board at Washington, composed of representatives of various departments and bureaus. Names and spellings approved by that board are required to be used on government maps and publications, to the exclusion of all other forms. Of course, there is no law compelling companies or people generally to use the forms adopted by the United States Board, but common sense would indicate that after this board has spent considerable time investigating and deciding on proper forms the presumption is in favor of the use of the names so selected.

As a rule the United States Geographic Board adopts a name or a style of spelling only in disputed cases, and never except after a thorough investigation. Local usage is approved as a general thing, unless there is a good reason to the contrary. The board has issued a set of suggestions regarding the selection of new names, believing that more care should be given the picking out of names for new places or unnamed geographic features. Long and clumsy names should be avoided. Names of complicated spelling should be avoided; but equally undesirable are names of a commonplace character, such as Elk Creek, Beaver Creek and Bald Mountain. There are too many of such names in the country. Oregon has a half a dozen Clear Lakes. Good Indian names are desirable, also names of Spanish and French derivation. Possessive forms should always be avoided when possible. Hudson Bay is the correct name, not Hudson's Bay. There are hundreds of stations such as Clark's, Dodson's, Mitchell's that should be Clark, Dodson or Mitchell. The suggestion of ownership should not be conveyed in geographic names.

The officers of the Oregon-Washington Railroad & Navigation Company and of the Northern Pacific Railway have done good work in the elimination of possessive names and styles not approved by the United States Geographic Board and of forms not adopted by the Post Office Department. In some cases the names used by the railroads were better than those used by the government, and the latter have been changed. The Southern Pacific no longer uses possessive names for stations. Other lines might well follow the examples of these companies.

A fruitful source of geographical confusion is to be found in railroad advertising literature. These often contain information that has been handed down from one edition to another without correction. The United States Geological Survey is carrying on detailed surveys all the time, and its maps contain later and better data with every new issue, information that is far superior to surveys that may be used by map publishers based on field work done a half-century ago.

The United States Geological Survey and the United States Geographic Board are always willing to furnish the

latest available information regarding names, elevations and extent of modern surveys, if addressed at Washington, D. C. It is better to get this information from Washington direct than to copy it from maps made years ago and based perhaps on doubtful surveys. The Oregon Geographic Board (Portland) has a large amount of accurate data on hand covering the Pacific Northwest, historical and geographical, and is glad to give assistance. The secretary of the board is Lewis A. McArthur. Too many folder maps show evidence of guess work. Good money is spent by railroads in publishing maps that are attractive but not accurate.

M. P. O.

More About Adequate and Efficient Supervision

IOWA.

To THE EDITOR:

On page 99 of your issue of December 10, I note an article entitled "Supervision versus Efficiency." Being a supervisor, I am, of course, greatly interested in anything published relative to this class of employees.

It is quite possible that the road on which the writer of the above mentioned article is employed tolerates conditions mentioned by him in his article, and "An Observer" is no doubt in a better position to know this than the ordinary official who is confined to one town or one division.

On the railroad on which I am employed in the capacity of supervisor, we have men traveling on the road who are assigned to general efficiency work; they are experts in their line and permit of no laxness of supervision or efficiency on the part of supervisors. I can safely say that there are no salaries being drawn for supervision where supervision is not being done and there are no foremen "obtaining money under false pretences."

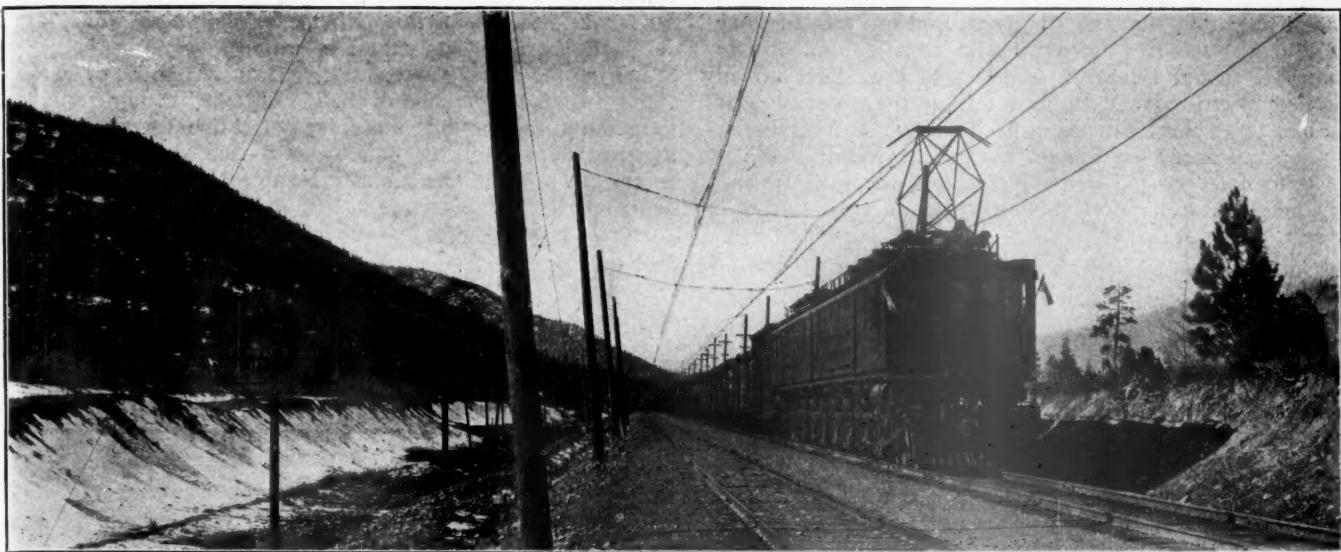
The supervisor of today must be efficient. He must be diplomatic; he must deal fairly with his men; he must make their working conditions as pleasant for them as is possible so far as his authority will permit. At the same time he must be firm and dignified and wide awake and on the job every minute in order to get a fair day's work out of every man in his employ. He must work in harmony with his superintendent, his master mechanic, or any of the various other officials with whom his duties bring him in contact.

The official acting in the capacity of "General Efficiency Man" should be an organizer and if his organization has deteriorated to such an extent that his supervisors are drawing their money "under false pretences" it is surely in a deplorable condition.

An organization of this kind should never be advertised. Advertising conditions of this sort is liable to result in doing harm to other organizations which are striving to be perfect. My advice to "An Observer" would be to roll up his sleeves and do a little house cleaning where it is most needed and build up an organization which will get results for every dollar expended. Being a supervisory official myself, I cannot let this item go without comment: if I did I should be allowing all supervisory officials to be classed with the inefficient, which my 25 years' experience tells me are greatly in the minority.

A. SUPERVISOR.

THE REFRIGERATOR INDUSTRY IN JAPAN.—A society for the organization of the refrigeration industry is being established in Japan. Foodstuffs will be conveyed from Manchuria to Japan in ships fitted up with refrigerating apparatus. Big refrigerating factories are to be constructed at Dairen, Fousan, Moji, Kobe, Yokohama, Tokio and Tsingtao, and all railways will be provided with refrigerator vans. The society's capital is fixed at about £2,000,000 sterling.—*The Engineer, London.*



A 100-Car, 5,000-Ton Freight Train, East-Bound at Thelma on the St. Paul.

A Comparison of Electric and Steam Motive Power*

From Which It Would Appear That the Steam Locomotive
Has About Outlived Its Usefulness.

By A. H. Armstrong

Railway and Traction Engineering Department, General Electric Company.

DURING THE YEAR 1920 the people of the United States will pay out for automobiles, not commercial trucks or farm tractors, but pleasure vehicles, a sum of money considerably greater than the estimated requirements of our steam railways for that year. The railways, however, may find it very difficult and perhaps impossible to secure the large sums needed without government aid, notwithstanding the fact that the continued operation and expansion of our roads is of vital necessity to the welfare and prosperity of the country and all its industries. The will of the American public has always been constructive and undoubtedly in due time its voice will be heard and properly interpreted by its representatives in Washington with the resulting enactment of such laws as will permit our railways to again offer an attractive field for the investment of private capital.

The purpose of this paper is not to discuss the politics of the situation nor any necessary increase in freight rates that may be required to make our roads self sustaining, but rather to offer certain suggestions as to the best manner of spending the sums that must ultimately be provided for new construction and replacements.

During the war period many lessons have been most clearly brought home to us and not the least of these is that there is something inherently wrong with our steam railroads. During the three generations of its development, we have become accustomed to look upon the steam engine as properly belonging to the railway picture with little thought given to its wastefulness and limitations, but around which railway practice of today has gradually crystallized.

During the winter of 1917-18 our railways fell down badly when the need was the greatest in their history. It is true that the cold weather conditions were unprecedented and the volume of traffic abnormal, but the weaknesses of steam

engine haulage were disclosed in a most startling and disastrous manner. Delayed passenger trains in cold weather can be endured by the traveling public in suffering silence or voluble expression, according to temperament, but blocking our tracks with frozen engines and trains, serious reduction of tonnage in cold weather and the prohibitive delay in transportation of freight in times of great stress is quite another thing and plainly indicates the inability of the steam engine to meet overloads and adverse climatic conditions.

In marked contrast to the adjoining steam engine divisions, the 440 miles of electrified section of the Chicago, Milwaukee & St. Paul continued to do business as usual all through that trying winter of 1917-18. The electric locomotives brought both freight and passenger trains over the electrified tracks on schedule time or better; in fact, it was quite customary to make up on the 440-mile electric run fully two hours of the time lost by passenger trains on adjoining steam engine divisions. While the results obtained upon the Chicago, Milwaukee & St. Paul were perhaps more spectacular due to the greater mileage electrically equipped, other electrified roads contributed similarly attractive records. The reliability and permanency of the comparison between steam and electric locomotive haulage is sufficiently guaranteed therefore by the results of several years' operation, to justify drawing certain conclusions regarding the merits of the two types of motive power. The following analysis of the railway situation is therefore offered for the purpose of exposing the fact that railroading today is in reality steam engine railroading and the general introduction of the electric locomotive will permit fundamental and far-reaching changes being made in the method and cost of hauling freight and passenger trains.

The writer is not proposing the immediate electrification of all the railways in the United States, as many roads of lean tonnage would render no adequate return upon the large

*Abstract of an address delivered before the Schenectady section of the American Institute of Electrical Engineers.

capital investment required, but offers the following table of total operating statistics simply as a measure of the magnitude of the problem confronting us in the future. In this country it should be noted, however, that we have already installed electric power stations during the past 30 years equal to twice the estimated capacity required for the electrical operation of every mile of track in the country today.

The tonnage passing over the tracks of our railways may be subdivided in a most interesting manner as shown in Table I.

TABLE I TOTAL TON-MILE MOVEMENT All Railways in United States Year 1918.		
	Per cent	Ton miles
1. Misc. frt. cars and contents.....	42.3	515,000,000,000
2. Revenue coal cars and contents.....	16.23	197,000,000,000
3. Loco. revenue driver wt only.....	10.90	132,300,000,000
4. Passenger cars all classes.....	16.13	196,000,000,000
Total revenue frt. and passenger.....	85.56	1,040,300,000,000
5. Railway coal	5.00	60,600,000,000
6. Tenders all classes.....	6.50	78,800,000,000
7. Locomotive railway coal.....	.39	4,700,000,000
8. Locomotive non-driving wt.....	2.55	31,000,000,000
Total non-revenue	14.44	175,100,000,000
Grand total—all classes.....	100.00	1,215,400,000,000

The first four items, representing 85.56 per cent of the total ton miles made during the year 1918 may be regarded as fundamentally common to both steam and electric operation. The last four items, however, are seriously affected by introducing the electric locomotive to the extent of completely eliminating items 6 and 7, reducing item 5 by possibly 80 per cent and item 8 by one half. Of the total of 14.44 per cent affected, therefore, it may be assumed for purposes of comparison that approximately 12 per cent or 146,000,000,000 ton miles at present hauled by steam engines over our roads will be totally eliminated with electric locomotive haulage. This ton mileage eliminated is equal to over 20 per cent of items 1 and 2 representing the revenue producing freight traffic on our railways. In other words, if all our railways were completely electrified they could carry one-fifth more revenue producing freight tonnage with no change in present operating expenses or track congestion.

It is evident that the greater part of the tonnage reduction effected by electrification is included in items 5 and 6 representing the railway coal movement in cars and engine tenders. The steam engine tender will, of course, entirely disappear while the railway coal haulage will be largely curtailed by utilization of water as a source of power and the establishment of steam power houses as near the coal mines as an abundant supply of good condensing water and load demand will permit. While water power should be utilized to the fullest economical extent, the greater portion of the railway power must undoubtedly be supplied by coal, due to the unequal geographical distribution of water power available.

Two-Thirds of the Coal Wasted

Even with coal as a source of power, it may not be fully appreciated just how enormous is the saving made by burning fuel in large modern power stations under the most efficient conditions possible, instead of under the boilers of 36,000 engines, which by necessity must be designed and operated for service rather than for fuel economy. During the year 1918 the fuel used by railways is reported as shown in Table II:

TABLE II Railway Fuel 1918	
Total coal production—all grades.....	678,211,000 tons
Used by steam railways.....	163,000,000 tons
Percentage of total.....	24 per cent
Total oil marketed U. S.....	355,927,000 bbls.
Used by steam railways.....	45,700,000 bbls.
Percentage of total.....	5.8 per cent
Coal equivalent of oil at 3½ bbls.....	13,000,000 tons
Total equivalent railway coal.....	176,000,000 tons

A quarter of all the coal mined in the United States is con-

sumed on our railways and the following analysis will point out some features of this extreme wastefulness which are inseparable from steam engine operation.

During the year 1910, exhaustive tests were made upon the Rocky Mountain division of the C. M. & St. P. to determine the relation existing between horse power hours work done in moving trains and coal and water consumed on the steam engines in service. The summary, Table III, gives the result of these tests.

TABLE III
C. M. & ST. P.—ROCKY MOUNTAIN DIVISION

	Coal and Water Used	Water per hp.	Water per lb. coal	Coal per hp. hr.
Three Forks-Piedmont	39.6	5.08	7.75	
Piedmont-Donald	35.4	4.70	7.54	
Deer Lodge-Butte	39.7	4.85	8.31	
Butte-Donald	40.4	4.86	8.74	
Harlowton-Jenny	38.0	4.09	8.90	
Jenny-Summit	44.2	4.65	9.48	
Three Forks-Piedmont	41.4	6.51	6.37	
Piedmont-Donald	40.2	5.63	5.78	
Average of 8 tests.....	39.86	5.04	7.86	

The above records were obtained during the portion of the runs that the engines were doing useful work in overcoming train and grade resistance, that is, all stand-by losses were excluded. The through run, however, included such losses in the following magnitude.

Adding standby losses to the average of 7.86 lb. per hp. obtained in the preceding eight tests, the total actual coal consumed under the engine boiler in 24 hours divided by the actual work performed by the engine was found to be 10.18 lb. per hp. at the driver rims.

TABLE IV
STANDBY LOSSES

	Coal per hour
Fire banked in roundhouse.....	150 lb.
Cleaning fires for starting.....	800 lb.
Coasting down grade.....	950 lb.
Standing on passing track.....	500 lb.

As the result of this particular series of tests it was determined that standby losses raised the coal consumed while doing useful work by 30 per cent. It should be appreciated in this connection, moreover, that this value was obtained on through runs with no yard switching service or adverse climatic conditions. It may be concluded therefore that under all conditions of service fully one-third the coal burned on our steam engines today is absolutely wasted in standby losses of the general nature indicated above.

Supplementing these tests, a thirty-day record was kept of all coal used on the entire Rocky Mountain division and the total engine, tender and train movement reduced to horse-power hours, resulting in a value of 10.53 lb. coal consumed per hp. at the driver rims. Both the above values were based upon constants of 6 lb. per ton train resistance at all speeds and seven-tenths lb. per ton per degree of curvature as determined in part by dynamometer car tests and representative of general railway operation. Reducing the average coal values of test runs and 30-day record per hp. hour to electrical constants we arrive at the results shown in Table V.

TABLE V

COAL EQUIVALENT PER KW. HR.—STEAM OPERATION	
Coal per hp. hr. at driver rims.....	10.27 lb.
Coal per kw. hr. at driver rims.....	13.75 lb.
Coal per kw. hr. at power supply on basis 55 per cent efficiency..	7.56 lb.

It is this last figure of 7.56 lb. of coal burned on steam engines to get the equivalent tonnage movement of 1 kw. hr. delivered from an electric power station that is of special interest to this discussion. Comparing coal and electrical records on the Butte, Anaconda & Pacific before and after electrification results in arriving at a value of 7.17 lb. of coal previously burned on the steam engines to equal the same service now performed by one kilowatt hour input at the substations, a figure comparing favorably with 7.56 lb. above arrived at by an entirely different method.

Making due allowance for the fact that Roundup coal is somewhat low in heat units, it is nevertheless within the limits of reasonable accuracy to assume that the steam engines operating over all our railways are consuming coal at a rate

ANALYSIS OF ROUNDUP COAL USED

Fixed carbon	49.26 per cent
Volatile carbon	38.12 per cent
Ash	7.74 per cent
Moisture	4.88 per cent
B. t. u.'s	11,899

closely approximating 12.75 lb. of coal per kilowatt hour of useful work done, as measured at the driver rims or 7 lb. per kilowatt hour as measured at a power station and including for convenience of comparison the transmission and conversion losses inherent to electrical operation.

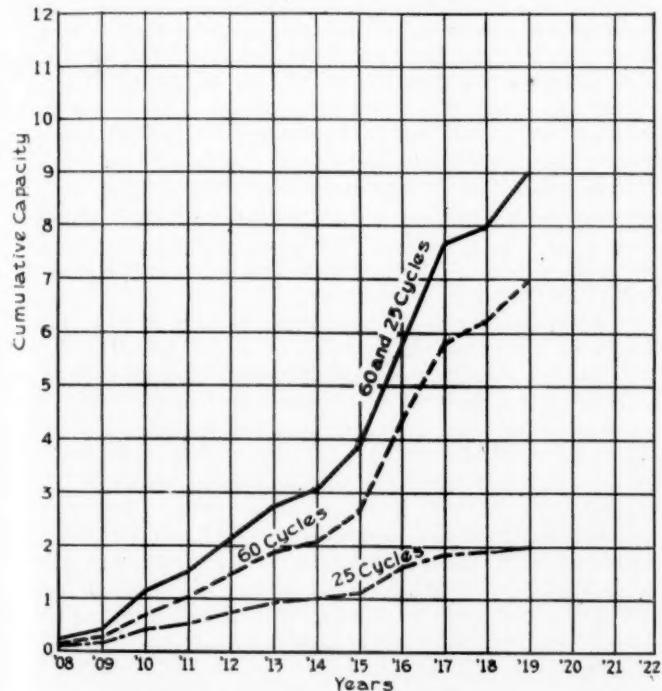
An electric kilowatt can be produced for so much less coal expenditure than 7 lb. that we are now in position finally to forecast the approximate extent of the coal economy that would result from electrification.

TABLE VI

RELATION BETWEEN KW. HR. AND TON MILES
C. M. & St. P. Avery-Harlowton, Year 1918

	Passenger	Freight
Average weight locomotive	300 tons	284 tons
Locomotive miles 1918	651,000	1,431,500
Loco. ton miles	195,000,000	407,000,000
Trailing ton miles	434,406,000	2,903,099,000
Total ton miles	629,406,000	3,310,049,000
Kilowatt hours	24,890,000	105,287,000
Watt hrs. per ton mile	39.6	31.9
Ratio loco. to total	31%	12.3%
Watt hrs. per ton mile combined movement	33.2	
Ratio loco. to total combined movement	15.25%	

All power values (Table VI) are given at the point of supply from the Montana Power Company at 100,000 volts,



Comparative Sales of 60 and 25 Cycle Turbines

and include deductions made for the return of power due to regenerative braking of the electric locomotives on down grades and amounting to approximately 14 per cent of the total. Owing to the excessive rise and fall of the profile of the electrified zone of the C. M. & St. P., its operation is materially benefited by regenerative electric braking and the value of 33.2 watt hours per ton mile for combined and passenger movement should possibly be raised to the round figure of 40 to make it apply more nearly to conditions universally obtaining on more regular profiles.

Hence referring again to the ton mile values of Table I:

Total ton miles 1918.....	1,215,400,000,000
Watt hrs. ton mile.....	40
Kw. hrs. total movement.....	48,700,000,000
Coal required at 7 lb. per kw. hr.....	170,000,000 tons

The actual equivalent coal consumed on our steam railways for the year 1918 is given as 176,000,000 tons, closely approximating the figure of 170,000,000 tons estimated above from the operating results obtained on the C. M. & St. P. electrified zone. These several values check so closely as to justify the completion of the fuel analysis of the railways, Table VII.

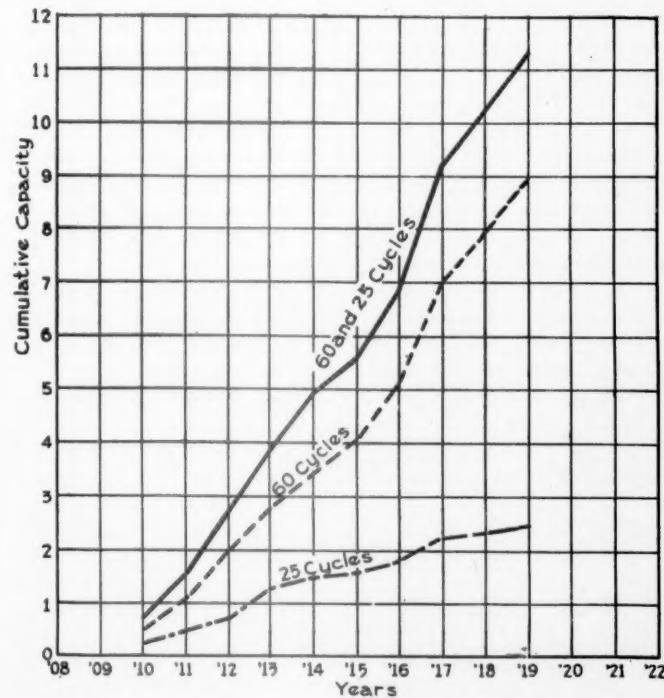
TABLE VII

COAL SAVING BY ELECTRIFICATION

Total ton miles steam.....	1,215,400,000,000
Reduction by electrification.....	146,000,000,000
Total ton miles electric.....	1,069,400,000,000
Kw. hrs. electric at 40 watts.....	42,776,000,000
Coal on basis 2½ lb. per kw. hr.....	53,500,000 tons
Equivalent railway coal 1918.....	176,000,000 tons
Saving by electrification.....	122,500,000 tons

The startling conclusion arrived at is that approximately 122,500,000 tons of coal or more than two-thirds the coal now burned on our 63,000 steam engines would have been saved during the year 1918, had the railways of the United States been completely electrified along lines fully tried out and proved successful today. This vast amount of coal is 50 per cent greater than the pre-war exports of England, and twice the total amount consumed in France for all its railways and industries. Moreover, the estimate is probably too conservative, as no allowance has been made for the extensive utilization of water power which can be developed to produce power more cheaply than by coal in many favored localities.

From figures given, the following conclusion is arrived at



Comparative Sales of 60 and 25 Cycle Transformers

in the matter of power station capacity required for complete electrification of the railways in the United States.

RAILWAY POWER REQUIRED

Kw. hr. electric operation 1918.....	42,776,000,000 kw. hr.
Average load 100 per cent load factor.....	4,875,000 kw.
Power station capacity at 50 per cent load factor.....	9,750,000 kw.

It appears therefore that approximately 10,000,000 kw. power station capacity would have been sufficient to run all the railroads for the year 1918, or one-half the station capacity which has been constructed during the past thirty years.

In order of magnitude, therefore, it is not such a formidable problem to consider the matter of power supply for our electrified railways, and it becomes evident also that the railway power demand will be secondary to industrial and miscellaneous requirements.

Such being the case, the question of frequency of electric power supply becomes of great importance, if full benefit is to be obtained from extensive interconnected generating and

of its continuous rating, but by supplying power to 45 electric locomotives from one transmission system, the average combined load factor is raised to nearly 60 per cent, a figure which could even be surpassed on roads of more regular profile. Furthermore, when the railway load is merged with the lighting and industrial power of the district and the whole diversified load supplied from the same 60 cycle transmission and generating system, it is quite evident that all the conditions are most favorable for the efficient production of power. In this country such an achievement will probably be governed by the laws of economic return upon the capital required, because our vast natural fuel resources are popularly regarded as inexhaustible, but in Europe there is the compelling spur of stern necessity behind the movement to economically utilize the water powers they possess in place of the coal they cannot get.

While the much discussed subject of power generation and transmission is a very vital part of the railway electrification project, chief interest centers in the electric locomotive itself. Few realize what a truly wonderful development has taken place in this connection in a comparatively few years and how peculiarly fitted this type of motive power is to meet the requirements of rail transportation. Free from the limitations of the steam boiler and possessing in the electric motor, the most efficient and flexible known means of transmitting power to the driving axles, the electric locomotive gives promise of revolutionizing present steam railway practice when its capabilities become fully recognized. The only limits placed upon the speed and hauling capacity of a single locomotive are those imposed by track alignment and standard draft rigging. Only questions of cost and expediency control the size of the locomotive that can be built and operated by one man, as there are no mechanical or electrical limitations that have not been brushed aside by careful development. Just what this means in advancing the art of railroading is as yet but faintly grasped any more than the boldest prophet of 20 years ago could have fully pictured the change that has taken place at the Grand Central terminal, as the result of replacing steam by electricity.

Progress in utilizing the capabilities of the electric locomotive has been slow. It is hard to break away from life-long railway traditions established by costly experience in many cases. In consequence, the electric locomotive has thus far simply replaced the steam engine in nearly similar operation. Even under such conditions of only partial fulfillment of its possibilities, the electric locomotive has scored such a signal operating success as to justify giving it the fullest consideration in future railway improvement plans.

On the C. M. & St. P., 42 locomotives have replaced 112 steam engines and are hauling a greater tonnage with reserve capacity for still more. On this and other roads, it has set a new standard for reliability and low cost of operation. In fact, although no official figures have yet been published, it is an open secret that the reduction in previous steam operating expenses on the C. M. & St. P. are sufficient to show an attractive return upon the twelve and a half millions expended for the 440 miles of electrification, without deducting the value of the 112 steam engines released for service elsewhere. As the electric locomotive is destined to leave its deep impression upon the development history of our railways, it is fitting that the remainder of this address should be devoted to its consideration.

Our steam engine construction is unsymmetrical in wheel arrangement, and further handicapped with the addition of a tender to haul its fuel and water supply, must run single ended. The result has been much congestion at terminals and the necessary roundhouses, always with the inevitable turntable, ash pits and coal and water facilities, have occupied much valuable land and in addition steam operation has greatly depreciated the value of neighboring real estate. The contrast offered by the two large electric terminals in New

TABLE VIII

ESTIMATED POWER STATION CAPACITY UNITED STATES YEAR 1918	
Central stations	9,000,000 kw.
Electric railways	3,000,000 kw.
Isolated plants	8,000,000 kw.
Total	20,000,000 kw.

transmission systems, covering the entire country. Indeed, with the full development of interconnected power systems supplying both railway and industrial load from the same transmission wires, the above assumption of 50 per cent load factor for the railway load can be materially bettered.

In this connection a method of limiting the troublesome peak load hitherto considered inherent to railway power supply has been in successful operation on the electrified C. M. & St. P. zone for the past year. With unrestrained peaks, the load factor was approximately 40 per cent, but this low value has been raised to nearly 60 per cent by the installation of this inexpensive and most satisfactory device, known as the power limiting and indicating apparatus.

TABLE IX.

LOAD FACTOR RECORDS, C. M. & ST. P., 1919.		
	Duration of peak, per cent	Load factor, per cent
April	6.4	59.3
May	4.6	56.1
June	1.6	56.5
July	0.7	55.6
August	4.1	54.7
September	9.5	58.8

The above readings cover the performance on the 220 miles of the Rocky Mountain division supplied by seven substations controlled as a unit. A load factor of nearly 60 per cent brings the electric railway within the list of desirable customers and makes it possible for power companies to quote attractively low rates for power.

Returning again to the question of power supply, it is instructive to note the general trend toward a higher frequency as evidenced by the turbine and transformer sales of the General Electric Company during the past decade.

It is quite evident that 60 cycles is rapidly becoming the standard frequency in America and many instances are of record where it has replaced lower frequencies, principally 25 cycles. This fact in no manner handicaps the future development of electric railways, as entirely satisfactory power can be obtained from 60 cycle transmission lines through rotary converters or synchronous motor generator sets, depending upon the direct current trolley voltage desired. Indeed, a growing appreciation of the declining importance of 25 cycle power generation in this country contributed largely to the demise of the single phase system as its chief claim for recognition is wiped out with the introduction of the motor generator substations required with 60-cycle supply.

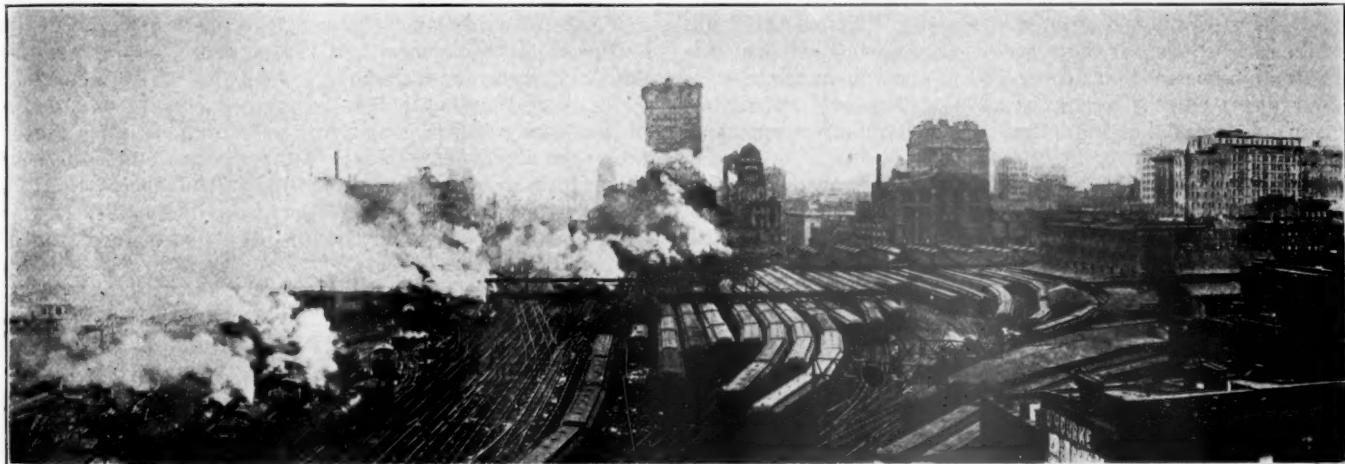
From the power station standpoint, the electrification of our railroads admits but one conclusion. We have some 63,000 engines now in operation and their average combined load amounts to approximately four million horsepower at the driver rims, or only an insignificant total of 65 hp. for each engine owned. It is true that owing to shopping and for one cause or another a large proportion of these engines are not in active service at all times, still the average 24-hour output of each engine is less than 10 per cent of its rating. In the case of the C. M. & St. P. electrification, the average load of each individual electric locomotive is only 15 per cent

York City is too apparent to need more than passing comment and similar results may be expected on the fulfillment of plans for electrifying the Chicago terminals.

While it has been a simple matter to design electric locomotives to run double ended at the moderate speeds required in freight service, the problem of higher speed attainment exceeding 60 miles per hour, has presented greater difficulties. The electric motor is, however, so adaptable to the needs of running gear design that electric locomotives are now in operation which can meet all the requirements of high speed

of this more complicated form of mechanical drive both in this country and abroad.

The electric railway situation in Italy is further complicated by the employment of three phase induction motors with all the attendant handicaps of double overhead trolleys, low power factor, constant speeds and overheating of motors resulting from operation on ruling gradients with motors in cascade connection. In many respects the non-flexible three-phase induction motor is poorly adapted to meet the varied requirements of universal electrification, and in consequence



The Grand Central Terminal, New York, as It Appeared in 1906

passenger train running. These results also are obtained with less than 40,000 lb. total weight and 9,500 lb. non-spring borne or "dead" weight on each driving axle, and finally, but not least, with both front and rear trucks riding equally well, a success never before achieved in locomotives of such large capacity.

There is as yet no general acceptance of a standard design of electric locomotive. Geared side rod construction for heavy freight service and twin motors geared to a quill for passenger locomotives appear to find favor with the Westinghouse-Bald-

Italian engineers are still struggling with the vexing question of system which may, however, be in a fair way of settlement through the adoption of a standard of 50 cycles as the frequency of a nation wide interconnected power supply, thus throwing the preponderance of advantages to high voltage direct current.

Low Cost of Maintenance

The extreme simplicity of the gearless motor locomotive appeals to many as does its enviable record of low mainte-



The Grand Central Terminal, New York, as It Appears Since It Was Electrified

win engineers, while the General Electric Company goes in for the simple arrangement of geared axle motors for freight and gearless motors for passenger locomotives. In both Switzerland and Italy the side rod locomotive enjoys an almost exclusive field. How much of this preference for side rod construction is due to the restrictions imposed by the use of alternating current motors is hard to determine, but the facts available indicate the uniformly higher cost of repairs

and maintenance cost, reliability and high operating efficiency, as exemplified by its unvarying performance in the electrified zone of the New York Central for the past twelve years.

TABLE X
MAINTENANCE COSTS, NEW YORK CENTRAL

	1913	1914	1915	1916	1917	1918
Number locomotives owned.....	48	62	63	63	73	73
Average weight, tons.....	118	118	118	118	118	118
Cost repairs per locomotive mile (cents).....	4.32	4.03	4.45	3.78	4.01	6.26

The high cost of living did not appear to have reached this favored locomotive until the year 1918.

The records on the C., M. & St. P. locomotive are equally remarkable when considering their greater weight and more severe character of the service.

TABLE XI

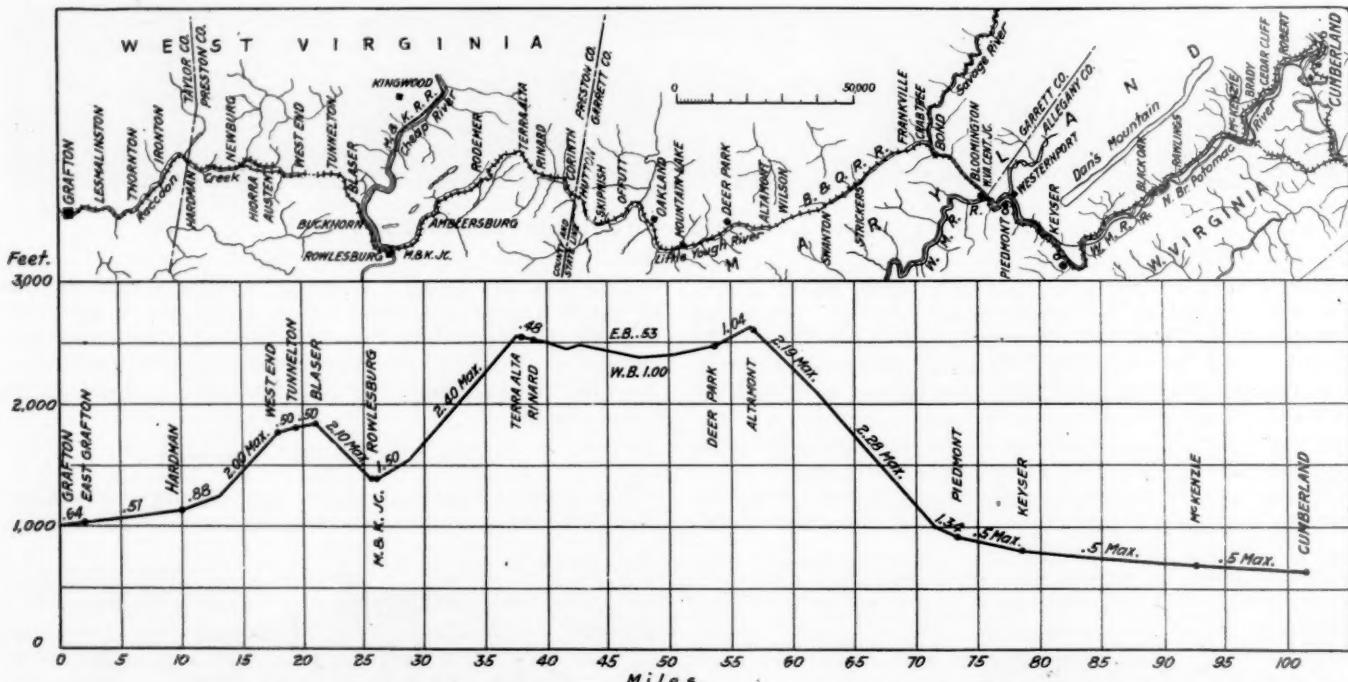
	LOCOMOTIVE MAINTENANCE COSTS, C. M. & St. P.	1916	1917	1918
Number locomotives owned.....		20	44	45
Average weight, tons.....		290	290	290
Cost repairs per locomotive mile (cents).....		8.21	9.62	10.87

In both these instances the cost of repairs approaches closely to 3c per 100 tons of locomotive weight. Giving due credit to the excellent repair shop service rendered in each case, it is instructive to note that 3c per 100 tons maintenance costs of these direct current locomotives is less than half the figures given for any of the alternating current locomotives operating in the United States or in Europe.

Compared with the cost of repairs of equivalent steam engines, the above figures for electric locomotives are so very favorable as to justify the general statement that electric

ditions so that nearly 30 per cent more tonnage can be handled by electric operation in about 80 per cent of the time it formerly took to handle the lesser tonnage by steam engines. This means a material increase in capacity of this single track line which may be conservatively estimated in the order of at least 50 per cent and probably more. In other words, on this particular road, electrification has effected economies which sufficiently justify the capital expenditure incurred and furthermore has postponed for an indefinite period any necessity for constructing a second track through this difficult mountainous country.

A careful study of the seriously congested tracks of the Baltimore & Ohio, between Grafton and Cumberland, disclosed vitally interesting facts. Company coal movement in coal cars and engine tenders constituted over 11 per cent of the total ton miles passing over the tracks. In other words, due to the very broken profile of this division, the equivalent of one train in every nine is required to haul the coal burned on the engines. Taking advantage of this fact and the higher speed and hauling capacity of the electric locomotive and its



Map and Profile of the Cumberland Division of the Baltimore & Ohio

motive power can be maintained for approximately one-third the cost of steam engines for the same train tonnage handled. As locomotive maintenance is a measure of reliability in service and in a way expresses the number of engine failures, it is quite in keeping with the records available to state also that the electric locomotive has introduced a new standard of reliability that effects material savings in engine and train crew expense as well.

Electrification and Operating Costs

While the first cost of electrification is admittedly high, it may in certain instances be the cheapest way to increase the tonnage carrying capacity of a single track, especially in mountain districts where construction is most expensive and steam engine operation most severely handicapped. In this connection a comparison of steam and electric operation on the C., M. & St. P. may be summarized as follows:

For the same freight tonnage handled over the Rocky Mountain division, electric operation has effected a reduction of $22\frac{1}{2}$ per cent in the number of trains, 24.5 per cent in the average time per train and has improved the operating con-

ditions so that nearly 30 per cent more tonnage can be handled by electric operation in about 80 per cent of the time it formerly took to handle the lesser tonnage by steam engines. This means a material increase in capacity of this single track line which may be conservatively estimated in the order of at least 50 per cent and probably more. In other words, on this particular road, electrification has effected economies which sufficiently justify the capital expenditure incurred and furthermore has postponed for an indefinite period any necessity for constructing a second track through this difficult mountainous country.

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freedom from delays due to taking on water and fuel, it is estimated that the three tracks now badly congested with present steam engine tonnage, could carry 80 per cent more freight with electric locomotive operation. The coal output of the Fairmont district is largely restricted by the congestion of this division and it is probable that equal relief with continued steam engine operation could not be secured without the expenditure of a much larger sum for additional track facilities than would be needed to put electric locomotives upon the present tracks.

Further instances could be cited where the benefits of electrification are badly needed and many of these are coal carrying roads, among which the Virginian Railway stands out conspicuously as a good opportunity to make both a necessary improvement and a sound investment.

Reviewing the progress made in a short twenty years, we have seen the steam turbine and electric generator drive the reciprocating engine from the stationary power field. The same replacement is now taking place on our ships, big and small, notwithstanding the fact that the marine reciprocating engine is a very good engine, indeed, and operates under the

ideal conditions of a steady load and constant speed. And now the steam locomotive must in turn give way to the electric motor for the same good reasons that the reciprocating steam locomotive has become obsolete and fails to respond to our advancing needs. Electrification affords a cheaper and better means of securing increased track capacity and improved service than by laying more rails and continuing the operation of still more steam engines in the same old wasteful way.

To conclude the startling picture of our present railway inefficiency, we are today wasting enough fuel on our steam engines to pay interest charges on the cost of completely electrifying all the railways in the United States, fuel that Europe stands in sad need of and which England and Germany, the pre-war coal exporting countries, cannot now supply. With operating expenses mounting to 82 per cent of revenue, in addition to constructive legislation and real cooperation on the part of the government in the matter of rates and safe guarding invested capital, is wise direction in the expenditure of the large sums that must speedily be found and used to bring our railways abreast of the times. Accord full honor to the reciprocating steam engine for the great part it has played in the development of our railways and industries, but complete the work by replacing it with the electric motor and enter upon a new era of real railroading.

Winter Railroading in the East and Canada

THE RAILROADS and Old Boreas are having unusual combats in all quarters this year. The Reid-Newfoundland Railway (narrow gage), 546 miles long, reported last week an "express" train as reaching destination three weeks late. Some of the snow drifts required days of shoveling and the passengers reported that rations ran short; at times fish was about all they had to eat. At St. John, New Brunswick, 1,100 freight cars in the yards of the Canadian National Railways were so buried in snow and ice that only by hand-shoveling and picking by large gangs of men for many days were they extricated.

From the central part of Canada, which has large forces of experienced snow fighters, we have no unusual reports; but out in Alberta a trainload of passengers who arrived in Edmonton on Sunday, January 25, six days behind schedule, had such a serious time that they gave the newspapers long and detailed accounts of their sufferings supported by affidavits. This was on the Edmonton, Dunvegan & British Columbia, a line which extends from Edmonton about 400 miles up toward the North Pole. That region is so thinly populated that the one passenger train of this railroad runs only twice a week. Passengers in stations suffered from cold, and then, on boarding the trains, complained of lack of drinking water. The thermometer went to 60 below zero, Fahrenheit, and, according to a mechanical engineer who was on the train, the locomotives were all leaky or otherwise out of order, and five of them together failed to keep the passenger cars warm. At McLennan, the junction of the Peace river and the Spirit river lines, passengers waiting for the connecting train had to go to dwellings some distance away to get warm. One local newspaper prints the names of 67 passengers who signed a statement setting forth their discomforts. This road is also in difficulties in regard to freight, grain dealers complaining to the Canadian government that wheat to the amount of a million bushels is liable to be spoiled by moisture because of lack of freight cars unless relief is forthcoming without delay.

On Monday, February 16, northern New York and a large part of New England were visited by a heavy snowstorm, accompanied by high wind and low temperatures, and freight

traffic was almost paralyzed before it had fully recovered from the difficulties of the storm of 10 days previous. On some branches and minor lines all traffic, both passenger and freight, was suspended for 12 to 24 hours or more. At Syracuse, N. Y., the thermometer registered 10 degrees below zero, and all railroad lines north of that city were reported on Monday as having no trains moving. Scores of trains were stalled in drifts, and some small villages had most of their food supplies eaten up by passengers. The main line of the New York Central was kept open only by the most heroic efforts all the way from Albany, N. Y., westward to Ashtabula, Ohio. High-class freight was kept moving with a considerable degree of success, but the heavy freight trains were motionless. Buffalo reported six inches of snow and a high wind, with trains many hours late from the south, east and west by all roads. Auburn, N. Y., reported no passenger trains in or out on Monday. This storm followed a thaw, and consequently switches were frozen at innumerable places.

On Tuesday there was a decided rise in temperature, and conditions were much improved.

In the storm of February 4-5 the difficulties in New England were worst in southeastern Massachusetts and in Rhode Island; but on the 16th trains were badly delayed in western Massachusetts and in Vermont and New Hampshire. From Concord, N. H., it was reported that the Boston & Maine was experiencing its worst tie-up in years. There, as in New York, the weather had been mild on Sunday, and on Monday switches and side tracks were frozen solid.

The New York, New Haven & Hartford had hard work not only in eastern Massachusetts but also on its line west of the Hudson river (the Central New England). Prior to the storm of February 4 the depth of snow on the ground was about 12 inches. Snow, sleet, rain and warm weather alternated for ten days and on February 15 a quick drop in temperature froze ice over the rails in many places throughout the company's lines. Some through passenger trains reached their destinations 24 hours behind time. As noted last week, many less important runs had to be omitted altogether.

In New England, as well as along the lines of the New York Central, the demands of cities for men in cleaning streets, and the general high wages paid to laborers, made very difficult the task of securing help. The New Haven road took about 1,300 men out of freight houses to handle shovels and picks, and about 1,700 were furnished by industries adjacent to the railroad, these latter being used largely to help in clearing freight yards and tracks other than the important main tracks. Altogether, the New Haven had nearly 8,000 men engaged in shoveling and picking. Train crews did a good deal of shoveling, and officers ran engines and snowplows.

Where the ice was thick the snowplows and flangers were almost useless and pneumatic tie-tampers were fitted with prong picks and used with considerable success in clearing switches. Three heavy Jordan spreaders were fitted with steel teeth on their nose-pieces and were successfully used in clearing the rails. These special expedients for dealing with ice were used mainly in and around Providence, R. I., where the ice formation was the worst. A statement credited to the Regional Director says that, in face of the adverse conditions, the New Haven road did wonderfully efficient work toward recovery.

On Tuesday, the 17th, the southern part of Michigan was reported as in the grip of the winter's worst storm, many trains being stalled in snowdrifts on the Pere Marquette and the Grand Rapids & Indiana.

In the region of New York City delays to trains because of obstructed tracks were less serious than farther north; but large numbers of freight cars had to be held many hours, and even days, because of difficulties of delivering in the

city, where the trucking of freight was paralyzed worse than before for 30 years because of snow and ice in the streets. The milk supply was seriously curtailed for one day.

Labor Threatens Congress

A THREAT OF DEFEAT for every member of Congress who votes for the conferees' report on the railroad bill was contained in a communication received February 13 by members of Congress from the Plumb Plan League.

"We say to you very frankly that labor is thoroughly aroused to the menacing potentialities of pending railroad legislation," the communication said, "and it regards with great alarm, and not without justification, the evil effects that will flow to the public and particularly to the workers if this compromise measure is enacted.

"Labor contends that this legislation has been framed solely with one interest in view—the aggrandizement of a powerful financial group—and that the public welfare will be best served by retaining the railroads under government control for a period of not less than two years, permitting fuller consideration and more equitable solution of this vexing problem."

The attention of Congressmen is called to the statement sent to editors by Mr. Hines, with the following comment:

"It is an illuminating resume of the direct benefits that were attained during the period of government control of railroads and sharply refutes much of the misrepresentation that has been disseminated by advocates of private control."

The League also sent copies of "Labor," the Plumb plan newspaper, containing an editorial denouncing the rate-making and labor provisions of the bill as agreed on by the conferees.

As to the labor provisions, the following comment was made: "Congress is being asked to adopt as a substitute for the vicious anti-strike clause of the Cummins bill a provision for adjustment of labor disputes. This is so crudely drawn and is so manifestly unfair to labor that it will add to our industrial difficulties instead of decreasing them."

Declaring that "a more colossal fraud was never perpetrated on a free people," the reference being to the rate-making and financial provisions of the conferees' bill, the editorial closes as follows: "Every man who votes for the conference report should be marked by his constituents and retired to private life at the first opportunity."

The announcement of a tentative agreement with the President on a plan for settling the wage controversy and the President's statement that federal control would end "in 16 days" caused no let-up in the campaign of the labor organizations to force a continuation of government control through the medium of Congressional action. A conference of representatives of the American Federation of Labor and the railroad labor organizations with members of the House friendly to labor was held at the capital on the evening of February 17, at which labor reiterated its demands for an extension of government control for two years and its opposition to the labor provisions in the pending bill. While the conference was in session, however, word was received of the latest change in the labor provisions of the bill adopted during the day by the conference committee at the suggestion of Director General Hines, so that disputes which threaten to tie up interstate commerce must be referred to a board of labor appeals appointed by the President, including three representatives of the public, and with a provision that a majority decision to be binding must be subscribed to by at least one of the public representatives.

Frank Morrison, secretary of the American Federation of Labor, who was presiding, then suggested that the con-

ference adjourn subject to call after the report had been thoroughly studied.

The new plan adopted by the conference "won't work," said W. N. Doak, vice-president of the Brotherhood of Railroad Trainmen. "It might as well not be created. If you want chaos in the country among these men you will get it with this sort of thing."

B. M. Jewell, acting president of the railroad employees department of the American Federation of Labor, was also quoted as saying that the railroad workers "want to get out from under an appeal board and don't want any more boards created."

Among the other labor officials present were Timothy Shea, acting president of the Brotherhood of Locomotive Firemen; L. E. Sheppard, president of the Order of Railroad Conductors; J. J. Forrester, president of the Brotherhood of Railway Clerks; W. H. Johnston, president of the International Association of Machinists; E. J. Manion, president of the Order of Railway Telegraphers; Martin J. Ryan, president of the Brotherhood of Railroad Carmen, and C. J. McGowan, acting assistant president of the Brotherhood of Boilermakers and Iron Shipbuilders.

Among the Congressmen were: Republicans—Zihlman, Maryland; Nolan, California; Murphy, Ohio; Burks, Pennsylvania; Sinclair, North Dakota; Baer, North Dakota; Strong, Kansas; Cole, Ohio; Garland, Pennsylvania; Morin, Pennsylvania; Ricketts, Ohio. Democrats—Huddleston, Alabama; Ayers, Kansas; Sherwood, Ohio; Bankhead, Alabama; Casey, Pennsylvania. Independent—Keller, Minnesota; Carss, Minnesota; Kelly, Pennsylvania.

Resolutions were adopted declaring that the labor officers have never endorsed or approved of either the Esch or Cummins bill, except that part of the Esch bill known as the Anderson amendment, which would confirm for the future all wage orders of the Railroad Administration until superseded by mutual agreement or by the decision of a bi-partisan board. The resolutions also said: "All classes of employees can be properly represented on three boards of adjustment, and by three commissions on labor disputes, and there is no necessity for additional boards. The present bona fide and regular labor employees' organizations have protected, and will properly protect, all railway employees. The creation of additional boards will cause confusion and create friction, thereby interfering with the present orderly process of disposing of labor disputes. Suppose the conferees recommend to Congress for adoption a bill that contains provisions for the settlement of disputes between railroads and employees different than herein stated, we must urge that the proposed law be defeated in its entirety."

A final protest against the return of the roads was made in a letter addressed to members of Congress on Tuesday by the heads of fourteen railroad labor organizations, declaring that "receiverships are inevitable if the railroads are unscrambled and each left to shift for itself" and that this situation may easily lead to "world-wide bankruptcy." Generally the labor organizations have taken the position that the pending railroad bill would put the roads "On Easy Street." Calling attention to the "colossal savings economies and efficiencies" under federal operation the letter says a revision to private management will mean an increase in freight rates of from 25 to 50 per cent. "A matter of vital interest" it continues, "is the enlisting of the employees so that they will work harmoniously, willingly and efficiently. It is a colossal waste to exclude from railway operations the contributions of 2,000,000 men with lifelong experience in the railway industry."

NEW COAL DISCOVERIES have been made in southern Chile. One of these, near La Union, is estimated to contain 40,000,000 tons, and a special railway is being built to the Rapallo Station.

New Tribunal Proposed to Settle Wage Demands

President and Mr. Hines Refuse Decision Before March 1, But
Persuade Employees to Await Investigation

WASHINGTON, D. C.

President Wilson has averted the strike of the maintenance of way employees ordered for February 17, but the troublesome and persistent question of railroad wages, like the rate question and several others, has been put over for settlement after the return of the railroads to private ownership. The answer of the President given to the railroad labor organizations on February 13, in accordance with the recommendations submitted to him in a report by Director General Hines, does not settle the matter, but postpones the issue for further investigation and for a decision by a new tribunal which will function after the relinquishment of the railroads. Just what this tribunal will be and how much has been settled was left somewhat in doubt by the manner of the announcement, but the conferees on the railroad bill rewrote the labor provisions on Monday for the purpose of insuring that it will be the proposed board of labor appeals. After stating the "unalterable position of the government" the President announced the steps he proposed to carry out. The reply of the labor leaders was not quite responsive to his statement, but outlined the steps they proposed to carry out.

President Wilson repeated his statement of last August that a temporary basis of living cost ought not to be made the occasion for a permanent wage increase, but in order that the consideration of wage matters should not be postponed indefinitely he proposed to bring about the earliest practicable organization of any machinery provided by the pending railroad legislation for dealing with wage matters or, in the event that no such provision is made by law, to use his influence to get the companies and the employees to agree on a special tribunal to settle the matter. He also promised to constitute a committee of experts to begin an immediate investigation of the entire problem for the purpose of expediting its solution. Meanwhile he requested that the organization which had a strike order outstanding withdraw it immediately.

To this the labor leaders replied objecting to waiting for the creation of a tribunal by legislation but tentatively accepting the proposal for the creation of a tribunal joint agreement of the railroads and the employees by promising to submit it to their constituencies at a meeting called for February 23 at Washington with certain conditions, including one that a binding decision be handed down within 60 days after the agreement to establish the tribunal. They asked that meanwhile the President secure the agreement of the railway executives and they specified that the special commission should be composed of an equal number of representatives selected by each side. Director General Hines on Monday telegraphed to T. De Witt Cuyler, chairman of the Association of Railway Executives, asking him to designate a committee to meet at Washington with Railroad Administration officials to discuss "railroad wage questions and related subjects."

As it is likely that the Esch-Cummins bill which provides machinery for the settlement of wage disputes, including a board representing the public, will become a law about as soon as any plan agreed upon at a meeting on February 23 could be put into effect, there appears to be a question as to whether the law can be forestalled in the way suggested by the labor leaders. As the President later referred to their reply as "indicating the purpose of the organizations generally to conform to the principles" of his message, he apparently did not consider their interpretation of his proposal as any usurpation of executive authority.

Mr. Hines conferred on Sunday with Senator Cummins

and submitted a revised draft of the labor provisions of the bill intended to make sure that it will fit the present case and this was adopted with some modification on Monday by the Conference Committee. Therefore unless the President should anticipate the legislation by the creation of an independent tribunal the wage question will be referred to a board composed of three representatives of the public, three of the railroads and three of the employees, with a provision that a majority decision to be binding shall be subscribed to by at least one of the public representatives.

Although neither the President nor Mr. Hines yielded to the renewed demands for further increases in wages, it turns out that the statement published last week that they had refused them, which was based on information that they had neither given nor promised any higher rates of pay, was somewhat too positive. They did refuse to accede to the demands, but they did so by declining to render a final decision as insisted upon by the labor officers during the short remaining period of federal control. Director General Hines said in his report that criticism of the Railroad Administration for postponing a final decision would not be warranted because "it is physically impossible for the Railroad Administration to dispose of these matters."

The President did settle the doubt which had persisted in some quarters as to whether the insistence on the wage demands might not create a situation which would lead to a further retention of the railroads by the government. This doubt had been created by positive statements by labor leaders that the roads would not be returned on March 1, but it was probably effectively dispelled by his statement that "federal control will end in 16 days," to which he added that it was proper that he reassure the employees that their claims would be properly and promptly disposed of.

By giving a new lease of life to the wage demands the President also settled for the time being the newspaper talk about a general railroad strike. The officers of 14 of the 15 organizations that had presented demands, only two of which had threatened a strike, promptly accepted the President's proposals, with some interpretations of their own. These included W. G. Lee of the Brotherhood of Railroad Trainmen, who had ordered a strike vote and had served a 30-day notice upon the Railroad Administration. The fifteenth organization was the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, which had definitely ordered a strike for February 17, and which did not join with the other organizations in replying to the President's proposal. The strike order was not postponed until after Mr. Hines had followed the President's statement with a strong telegram to President Barker of the maintenance employees' organization, informing him that such a strike would merely cause a loss of the brotherhood's status, after the President had sent him another telegram, and after the officers of the other organization had brought considerable pressure to bear upon him.

Mr. Barker telegraphed Mr. Hines Saturday night that the strike had been indefinitely postponed in compliance with recommendations of the brotherhood's committee at Washington.

The plan of settlement announced from the White House on Saturday, February 14, leaves the railroad wage question about where it was when the railroads were taken over in December, 1917. At that time practically all classes of railroad employees were demanding increases in wages to keep

pace with the increased cost of living or with increases which some of the classes had already received. When the demands were later presented before the Railroad Wage Commission the commission estimated that they amounted to about one billion dollars a year. At the present time the railroads are confronted with more demands from practically all classes of railroad labor, amounting to something like a billion dollars a year, to meet the higher cost of living and to establish proper relationships between various classes. In 1917 there was no established tribunal ready to pass upon the question, but it had been left in the hands of the President by the railroad executives and with some reservations by the labor unions.

At that time the railroads were awaiting a decision from the Interstate Commerce Commission on their application for an increase in rates to help them pay for wage advances they had already made. For some time now the railroad companies have been preparing to ask the commission for another increase in rates to enable them to pay for the wage increases as well as other advances in operating costs that have been made during the past two years. The principal points of difference in the situation as it exists today and as it was at the end of 1917 is that both the rate base and the wage base from which calculations now must start are higher than they were, the rate base being about 30 per cent higher and the wage base about 50 per cent higher. However, the provisions of the Esch-Cummins bill, reported to Congress this week, and the fact that all wage advances since 1917 have been made by governmental authority, give a greater degree of assurance than has existed heretofore that any new ones will be reflected in the rate level.

No authoritative estimate of the total wage increase demanded has been made, but Director General Hines in his report says his wage board has estimated that merely to equalize all employees on the basis of the average increase of a group of 5 per cent of the employees would cost \$375,000,000 a year and that even this small group as well as the others is now demanding large additional increases.

As announced in last week's issue, President Wilson received a committee representing the 15 organizations of railroad employees (although there was some question as to whether it was authorized to represent the maintenance of way employees) at their request on the south portico of the White House on February 13. He handed them a prepared statement containing his answer to their demands and his proposals, based on a report and recommendations submitted to him by Director General Hines on the day before, together with communications representing the demands of the 15 organizations. This was the first personal conference that the President has held since his illness with any one but members of his family, physicians, visiting royalty and one or two of his closest associates.

Timothy Shea, president of the Brotherhood of Locomotive Firemen and Enginemen; B. M. Jewell, acting president of the Railway Employees' Department of the American Federation of Labor, and E. J. Manion, president of the Order of Railroad Telegraphers, who constituted the committee, talked with the President for 5 or 10 minutes and went away promising to submit a reply within 24 hours. Meanwhile J. B. Malloy and a committee representing the maintenance of way brotherhood and W. G. Lee and a committee representing the trainmen, who had placed their organizations on a slightly different basis from the others by ordering a strike in the case of the first organization, and by breaking off the agreement in the case of the second, had called on Director General Hines, who had promised to give them each a reply in writing, taking the same position as that announced by the President.

The labor executives except those representing the maintenance of way brotherhood held a series of conferences at the American Federation of Labor building and drafted their reply to the President, which was submitted to him shortly

after noon on Saturday, after which it was given out, together with copies of the President's statement, Mr. Hines' report to him and some of the correspondence between Mr. Hines and the 15 organizations.

President Wilson's statement of February 13 was as follows:

President Wilson Proposes New Wage Tribunal

I address you as the chief executives of the largest railroad organizations, which are among the most important industrial democracies in the country. I ask you to bring this message and its enclosure to the attention of your members on all the railroads to the end that they, at first hand, may understand the government's view as to the present situation. I am confident that with this personal understanding on their part they will see that the position of the government is not only just to all interests, but is, indeed, unalterable, and also protects the interest of the railroad employees. The fundamental theory of labor organizations is that their membership is intelligent and capable of reaching enlightened conclusions, and I think it is of paramount importance at the present time that this great body of American citizens shall have the fullest opportunity personally to consider the national problem of railroad wages in its national aspect and shall not in the absence of this opportunity form erroneous impressions on the basis of local or fragmentary information.

I have received two letters on this general subject signed by all but two of the executives to whom this letter is addressed. I have read those letters with the greatest care and have taken them fully into consideration.

On the 25th of last August, I publicly announced the conviction that a large permanent and general increase in railroad wages ought not to be made upon the basis of the level of the cost of living then prevailing if that cost of living level were to be merely temporary, and I counselled railroad employees to hold their demands in abeyance until the time should arrive when it could reasonably be determined whether that level of the cost of living was temporary or not. They have patriotically and patiently pursued this course and in general have shown an admirable spirit in doing so.

I then anticipated and made it clear in my public statement that the time for determining whether or not the level of the cost of living was such as to be the basis of a readjustment of wages might not arrive until after the expiration of federal control and accordingly gave my assurance to the railroad employees that in that event I would continue to use the influence of the executive to see that justice was done to them.

Federal control will end in 16 days and in accordance with the policy as explained to the employees, it is now eminently reasonable and proper that I take such steps as will reassure them that their claims will be properly and promptly disposed of. This is all the more necessary because inevitably the change from federal control to private control will in the absence of special provision involve delay in dealing with these matters which could not be otherwise than disquieting to the employees.

I wish, therefore, to announce to all railroad employees at this time that I propose to carry out the following steps:

1. In the event that in connection with the return to private control provision shall be made by law for machinery for dealing with railroad wage matters I shall promptly use my influence, and so far as such law confers power upon me I shall promptly exercise that power, to bring about the earliest practicable organization of the machinery thus provided.

2. In the event that no such provision is made by law for dealing with these matters I shall employ the influence of the executive to get the railroad companies and the railroad employees to join promptly in the creation of a tribunal to take up these problems and carry them to a conclusion.

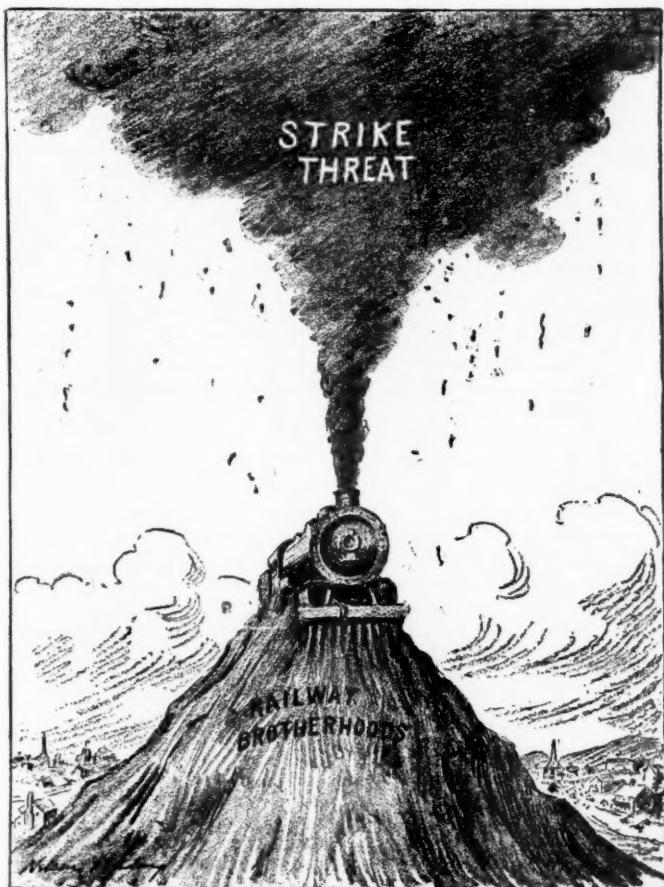
3. I shall at once constitute a committee of experts to take the data already available in the various records of the United States Railroad Administration, including the records of the Lane commission, and of the Board of Railroad Wages and Working Conditions, and to analyze the same so as to develop in the shortest possible time the facts bearing upon a just and reasonable basis of wages for the various classes of railroad employees with due regard to all factors reasonably bearing upon the problem and specifically to the factors of the average of wages paid for similar or analogous labor for other industries

in this country, the cost of living, and a fair living wage, so as to get the problems in shape for the earliest possible final disposition. The views of this board will serve as a guide to me in carrying out the assurance I gave to the employees last summer that I would use the full influence of the executive to see that justice was done them and will, I believe, be a means of avoiding what might otherwise be a long-drawn out investigation of facts. While I propose to act at once in regard to this matter, and to avoid any delay in doing so, I shall, nevertheless, invite the co-operation of the railroad corporations and believe they will appreciate that it is to their interest, as well as to the public interest, to get these matters promptly settled.

I am sure it will be apparent to all reasonable men and women

only as temporary. This high cost of living (which in some respects has become even higher but in other respects has already begun to respond to the corrective factors which have been and are at work) is the product of innumerable influences, many of them of world-wide operation. In the nature of things these readjustments could not come with rapidity. The campaign which the government has inaugurated to aid in controlling the cost of living has been steadily gaining in momentum, will continue to be aggressively conducted, and I believe will have an increasingly beneficial effect, and this notwithstanding the fact that some of the most needed remedial measures which I recommended to Congress have not been adopted. However, preparation, consideration and disposition of these important wage matters ought not in my opinion to be postponed for a further indefinite period, and I believe the matters involved ought to be taken up and disposed of on their merits at the earliest practicable time.

Pending the consideration of these problems by the director general of railroads and by me, at least one class of railroad employees has indicated its unwillingness to await a conclusion and has announced its intention of striking. A strike of railroad employees would at any time be highly injurious to the public and particularly at this time would be harmful not only to the entire country, but to the railroad employees as well. Any interruption of transportation will of course have a serious adverse



From the Brooklyn Daily Eagle

Threatening Another Eruption

in railroad service that these momentous matters must be handled by an agency which can continue to function after March 1, and therefore cannot at the present stage be handled to a conclusion by the Railroad Administration.

The accompanying report which the director general of railroads has made to me makes it clear that it has been wholly impracticable for the Railroad Administration to dispose of these matters up to the present time. Not only were the demands for general wage increases necessarily held in abeyance by reason of the policy announced by the government last summer, but the demands for increases to correct inequalities were so general and far-reaching as to become in themselves demands for general wage increases and were so complex and conflicting that despite continuous application on the part of the Board of Railroad Wages and Working Conditions and the other agencies of the Railroad Administration, the subjects could not be presented for even preliminary consideration by the director general until the present month, and then in an incomplete form and with a lack of ability on the part of the wage board to reach an agreement growing out of the largely conflicting condition of the data as presented.

Not quite six months have elapsed since I expressed my belief and hope that the then high cost of living could be regarded



From the N. Y. Tribune

Taking His Dog Along When He Goes for the Milk Isn't Going to Help Matters Any

effect upon the industrial life of the nation at a peculiarly critical period.

Under the circumstances, therefore, I have the right to request and I do request that any railroad labor organization which has a strike order outstanding shall withdraw such order immediately and await the orderly solution of this question. The railroad men of America have stood loyally by their government throughout the war—they must in the public interest and in their own interest continue to do so during this delicate period of readjustment.

I believe that every intelligent railroad employee will recognize

the extreme importance of continued co-operation with the government in this matter, and that any other course will prove not only a grave injury to the public, of which railroad labor is such an important part, but a serious blow to the important principle of collective bargaining and will merely delay rather than expedite the just and prompt solution of these important matters.

This was addressed to B. M. Jewell, acting president, Railway Employees' Department, American Federation of Labor; W. S. Stone, grand chief, Brotherhood of Locomotive Engineers; Timothy Shea, acting president, Brotherhood of Locomotive Firemen and Enginemen; L. E. Sheppard, president, Order of Railway Conductors; W. G. Lee, president, Brotherhood of Railway Trainmen; S. E. Heberling, president, Switchmen's Union of North America; E. J. Manion, president, Order of Railroad Telegraphers; James W. Kline, general president, Brother of Blacksmiths and Helpers; William H. Johnston, president, International Association of Machinists; Martin F. Ryan, general president, Brotherhood of Railway Carmen of America; Louis Weyand, acting president, Brotherhood of Boilermakers and Iron Shipbuilders; John J. Hynes, international president, Amalgamated Sheet Metal Workers International Alliance; James P. Noonan, international president, International Brotherhood of Electrical Workers; A. E. Barker, grand president, United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers; James J. Forrester, general president, Brotherhood of Railway Clerks; D. W. Holt, president, Brotherhood of Railroad Signalmen of America.

The reply sent to the President on February 14, signed by all of the above or their representatives, except Mr. Barker, was as follows:

**Labor Leaders Call Meeting to Accept
President's Proposal with Interpretations**

We, the undersigned chief executives of the railway labor organizations signatory hereto, have been jointly conferring on your letter of February 13, and note the following conclusions have been reached by you:

1. "Consideration and disposition of these important wage matters ought not in my opinion be postponed for a further indefinite period, and I believe the matters involved ought to be taken up and disposed of on their merits at the earliest practicable time."

We understand from this that you are referring to the policy of the government as announced August 25, 1919, and that you now believe the time has arrived when prompt disposition of general wage increases for railway labor should be made. In the interest of labor in general, and especially railroad labor and railroad operation, we are extremely gratified to note that you now recognize the necessity for promptly disposing of these vexatious problems; also that you recognize that railroad labor has patriotically and loyally complied with your request of August 25, 1919.

2. We are further gratified to note that you now state that due regard shall be given "to all factors reasonably bearing upon the problem, and specifically to the factors of the average of wages paid for similar or analogous labor for other industries in this country, the cost of living, and a fair living wage."

We have been especially pleased with your recognition of these principles. It has been our feeling that the present movement has been different from what is ordinarily termed a wage movement.

We have felt that our wages should be adjusted to meet radical changes in living conditions, and that the government was morally bound to consider the situation, and to assure us as far as possible that this would be done before the termination of federal control of the railroads.

During the entire period of the war we felt and acted upon the principle that our country's emergency was not a period for demanding an improvement in our economic conditions. We have been reluctant to believe that the Railroad Administration could not finally dispose of these wage matters before the expiration of government control, and are greatly disappointed that after due consideration you also think that this is impracticable.

We understand from your letter that you have definitely decided that the subject matter must be dealt within one of the two following methods:

1. "In the event that in connection with the return to private control provision shall be made by law for machinery for dealing

with railroad wage matters I shall promptly use my influence, and so far as such law confers power upon me, I shall promptly exercise that power, to bring about the earliest practicable organization of the machinery thus provided."

2. "In the event that no such provision is made by law for dealing with these matters, I shall employ the influence of the executive to get the railroad companies and the railroad employees to join promptly in the creation of a tribunal to take up these problems and carry them to a conclusion."

In this connection we have been pressing the necessity for immediate relief, and urge that you do not require us to await the creation of a tribunal by legislation to deal with this problem. We feel justified in saying that we do not believe that railroad employees will willingly accept any plan which contemplates delay.

It is our earnest conviction that the situation warrants us urging that you promptly indicate to railroad labor that you will create by agreement a special tribunal to deal with this specific and important problem.

With a full realization of our responsibilities, however, we have decided to submit to our constituencies the advisability of the creation of a special joint commission composed of an equal number of representatives selected by the railroad companies and the railroad labor organizations signatory hereto by agreement, and invested with full authority to deal with this particular controversy on the basis of the following principles:

1. Rates of pay for similar and analogous services in other industries.
2. Relation of rates of pay to increased cost of living.
3. A basic minimum living wage sufficient to maintain a railroad man's average family upon a standard of health and reasonable comfort.
4. That differentials above this basic minimum living wage be established, giving among other things due regard to skill required, responsibility assumed, and hazard incurred; decisions of this tribunal to be handed down within 60 days after agreement to establish it, and to be final and binding upon all railroads in the United States and employees whom we represent.

In compliance with your request that we submit your message and its enclosure to the memberships, we have issued a call for the necessary representatives of the organizations to meet in Washington, D. C., February 23, when your letter of February 13 and enclosure, together with the above proposal will be presented to them for consideration and determination.

Pending this action on our part, we respectfully request that you take necessary steps to place this proposal before the executives of the railway companies and secure their agreement thereto, so that when our representatives convene on February 23 we will be able to place before them a definite basis for final action.

Director General Walker D. Hines' report and recommendations, submitted to the President on February 12, were as follows:

Director General Hines' Report

Almost without exception the numerous classes of the two million railroad employees are pressing for substantial increases in wages and the very few classes not pressing such demands are insisting that their wages must be increased if the demands of other related classes are granted in whole or in part.

These demands were presented to the Railroad Administration's Board of Railroad Wages and Working Conditions, beginning with the latter part of last summer and continuing through the fall. So far as the demands were for general increases in wages, they were held in abeyance in accordance with your policy announced last summer that the permanent general wage increases ought not to be made until there had been a reasonable opportunity to determine whether the then prevailing high level of the cost of living was of a temporary character. The demands, so far as they were based on claims of inequality with other classes of railroad employees, were promptly considered by the board.

The demands of the shopmen were based largely on the cost of living and on the claim that similar employees in outside industries are receiving higher wages. The Brotherhood of Railroad Trainmen's claim was based largely on the cost of living and on the claim that the wages then paid did not constitute a living wage for the employees. The conductors demanded material increases for all classes and the continuation

of the differentials compared with the brakemen as established by the present wage orders. The clerks' organization claimed that employees represented by them had not received increases equal to those granted to the shopmen and to the telegraphers. The maintenance of way employees and enginehouse laborers claimed that they had not received equal treatment with the shop men and particularly that they had not received equal treatment with maintenance of equipment mechanics. The firemen claimed that the train and engine employees had not received increases proportional to those granted to shop men and referred particularly to the increases granted to carmen. The switchmen did not make any claims as to inequality, but based their request for



From the Birmingham Age-Herald

Just Help Yourself

increased wages on the cost of living and the necessity for employees having a minimum wage. The telegraphers demanded that their rates be standardized with a resulting increase to nearly all of them.

As illustrating the complexity and wide scope of these matters, the labor members of the board, in suggesting a basis they thought would bring about equalization, estimated that the cost of such equalization would be approximately \$375,000,000 per annum. This figure was arrived at by taking the average monthly increase of a small group of railroad employees, embracing only about 5 per cent of the total number of railroad employees, and estimating how much additional increase in money per month it would be necessary to give the other classes of railroad employees in order to equalize on certain theories with this small group. Even this small group is now demanding large increases. This figure of \$375,000,000 is much less than the employees are demanding. Broadly speaking, the increase of each one cent per hour for all railroad employees of all classes would, with allowance for incidental overtime, cost considerable in excess of \$50,000,000 per year. The following indicates the principal, but not all, of the contentions advanced by the principal classes of the railroad employees involved:

THE BROTHERHOOD OF RAILROAD TRAINMEN

Passenger brakemen to be increased from \$120 per 30-day month to \$150 for 26-day month.

Baggagemen be increased from \$124.80 for 30-day month to \$160 for 26-day month.

Assistant conductors be increased from \$144 for 30-day month to \$179 per 26-day month.

Freight brakemen in valley territory be increased from \$4.08 per day to

\$5.88 per day with 10 per cent increase over these rates wherever the grade exceeds 1.8 per cent.

Yard foremen or conductors increased from \$5.33 per day to \$7.20 per day.

Yard helpers or brakemen be increased from \$5 per day to \$6.90 per day.

Switch tenders be increased from \$4 per day to \$5.90 per day.

Also time and one-half for all Sunday and holiday service.

Also guarantee 26 days' pay per month for regular employees in all classes of service.

THE ORDER OF RAILWAY CONDUCTORS

Passenger conductors be increased from \$180 per 30-day month to \$225 for 26-day month.

Through freight conductors be increased from \$5.40 per day to \$7.65 per day in valley territory, with increases in the mountain rate from \$5.81 to \$8.37 per day.

Local freight rates be increased from \$5.92 to \$8.38 per day in valley territory, with increase in mountain rate from \$6.26 to \$9.13 per day.

THE BROTHERHOOD OF LOCOMOTIVE FIREMEN AND ENGINEENEMEN

Road freight firemen to be increased an average of \$1.84 per day over present rates.

Yard freight firemen to be increased an average of \$2.25 per day over present rates.

Passenger firemen to be increased from present average rate of \$4.31 per day to \$6.50 per day, an increase of \$2.19 per day.

THE BROTHERHOOD OF LOCOMOTIVE ENGINEERS

While presenting no specific requests, notice was served that the engineers desired increases in wages proportionate to any increases granted other employees.

All road employees, as distinguished from yard employees, in the four foregoing organizations, get proportionately increased pay per day when they make mileage in excess of 100 miles and in freight service get time



From the Louisville Courier-Journal

Every Knock's A Boost

and one-half for time consumed in excess of what would be required on the guaranteed speed basis, which is 12½ miles per hour.

THE SWITCHMEN'S UNION OF AMERICA

Foremen or conductors be increased from \$5.33 per day and night to \$8 per night and \$7.50 per day.

Helpers or brakemen be increased from \$5 per day or night to \$7.50 per night and \$7 per day.

Switch tenders to receive same rate as helpers.

Time and one-half for Sundays and holidays.

MAINTENANCE OF WAY AND ENGINEHOUSE LABORERS

Rate for all mechanics in the maintenance of way department to be increased from basic rate of 53 cents per hour to uniform rate of 68 cents per hour.

Rate for all trackmen and other laborers to be increased from rates

running from 28 cents to 40 cents per hour to a uniform rate throughout the United States of 50 cents per hour. The bulk of these employees now receive between 35 cents and 40 cents.

BROTHERHOOD OF RAILROAD SIGNALMEN OF AMERICA

An increase of approximately 10 cents per hour for each class of signal employees.

THE BROTHERHOOD OF RAILROAD CLERKS

An increase in pay of at least 20 cents per hour, retroactive to January 1, 1920, and in addition thereto the re-establishment of differentials between certain classes of employees.

Also the immediate elimination of the 43 cents per hour maximum rate established by the present wage orders, for freight handlers and other labor in freight houses, storerooms, etc., and time and one-half for Sundays and holidays.

THE ORDER OF RAILROAD TELEGRAPHERS

That the rates received by telegraphers on the Southern Pacific—Pacific System—which was stated to be practically the highest in the United States, on any important railroad, shall be taken as a basis, the rates of all other telegraphers put on the same basis, and then an increase of 17 cents per hour added to rates so established. The equalization alone, leaving out the addition of the 17 cents per hour additional, would cost the railroads approximately \$13,000,000 per annum, and the 17 cents per hour increase would mean \$36,000,000 per annum additional.

SHOPMEN

Increase to approximately 85 cents per hour, for employees now generally receiving 67 cents and 72 cents per hour.

Most of these general requests were, however, held in suspense on account of the policy established in August, and instead claims were urged for smaller increases on the basis of inequalities.

As a further illustration of the difficult labor problems which confronted the Railroad Administration and which had to be handled during the period since last August, both by the board and by the divisions of operation and labor and the director general himself, I call attention to the following labor subjects of special importance which were disposed of during that period. Their disposition, in addition to taking much time of the board, had occupied the wage experts of the divisions of labor and operation, and to a considerable extent the heads of those divisions, in almost continuous conferences from the latter part of August to the end of January.

1. On September 20, 1919, and effective October 20, 1919, there was signed between the director general and the shop crafts a national agreement to remain in effect during federal control which standardized rules and working conditions for the employees working on the railroads and belonging to those organizations. It created machinery for the settlement of all disputes; made numerous other changes of importance to the employees, and provide that the agreement should not be ended except on 30 days' notice.

2. On November 22, 1919, and effective December 16, 1919, a national agreement was signed between the director general and the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers which for the first time standardized rules and working conditions for such employees, put into effect time and one-half for overtime after eight hours and established rules upon seniority, discipline, etc. The existing wage orders were incorporated in this agreement and were to be changed only as provided in the agreement, and the agreement was to be effective during federal control and provided that there would be no change in it until after 30 days' notice had been given by either party.

3. On January 13, 1920, effective January 1, 1920, a national agreement was made between the director general and the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, which standardized rules and working conditions for such employees, established time and one-half for overtime after eight hours and made various important changes in working conditions. This agreement was to remain in effect during federal control unless changed after 30 days' notice.

4. On January 22, 1920, effective February 1, 1920, a national agreement was signed between the director general and the employees represented by the Brotherhood of Railroad Signalmen of America which established time and one-half for overtime after eight hours and standardized rules and working conditions. This agreement was to be effective during federal control and was to remain in effect until abrogated on 30 days' notice by either side.

5. Effective January 16, 1920, a national agreement was signed between the director general and the International Brotherhood of Firemen and Oilers which standardized rules and working conditions for such employees and put into effect time and one-

half for overtime after eight hours. This agreement was to remain in effect during federal control unless it should be changed on 30 days' notice by either side.

6. On December 15, 1919, and effective December 1, 1919, an order was made under which time and one-half for overtime was made effective for train and enginemen in slow freight service. Under this arrangement all arbitrations and special allowances formerly applicable between terminals were eliminated. Special allowances for switching and similar work at initial terminals were preserved but at the former rates. A standard held-away-from-home terminal rule was granted. This disposed of the problem which had been in dispute for many years between this class of employees and the railroad managements and which had been before the Railroad Administration in one form or another practically since its inception.

The important steps just enumerated have not only greatly improved and stabilized working conditions but have given various important classes of the employees, and especially train and enginemen and maintenance of way men, numerous benefits of substantial pecuniary value, largely in the way of additional pay for overtime aggregating perhaps from \$50,000,000 to \$65,000,000 per year, which they have only begun obtaining within the last one or two months.

The pending demands which I have enumerated were, as above stated, considered by the board so far as they were regarded as constituting claims of inequalities. But the claims were so extensive, rested upon such diverse and elaborate data, and were so far from consistent, that the board was not able to agree upon any recommendations whatever as to any of them and the various members were not able to submit even their individual views until the latter part of November and during the month of December. By reasons of the complexity and conflicting character of the claims, and of the diverse views of the members of the board, the matter called for elaborate analysis by the divisions of labor and of operation, and could not possibly be gotten ready for even my preliminary consideration until the end of January. By that time the employees had begun anew to insist that these matters ought to be considered not only on the basis of inequalities, but on the basis of needed general increases to meet the increased cost of living, the wages paid in other industries, provision of a reasonable minimum wage, etc. In such circumstances it became evident to me, and to all of my associates in the divisions of labor and of operation, that the matters were so inter-related that they could not be dealt with except by viewing the question as one of general adjustment of railroad wages, on consideration of the whole situation, and that it would be a physical impossibility for the Railroad Administration, prior to its loss of jurisdiction on February 29, to act with finality.

A conference was arranged with the chief executives of all of the principal railroad labor organizations to consider this situation and to discuss the question of an appropriate procedure for dealing justly with the matter. This conference began on February 3 and has continued up to this time in an effort to clarify the facts and reach a clear understanding. The conference has proved exceedingly valuable, and has paved the way, I believe, for a much more expeditious handling of the situation than would have otherwise been possible. At the same time I have become more convinced than ever that the subject cannot be intelligently and justly dealt with, except in a comprehensive way, which will include consideration of all pertinent factors, among these being the matter of average wages for analogous service in other industries throughout the country. The question of the cost of living, and the question of a reasonable minimum wage, as well as the claims as to inequalities. So far, the Railroad Administration has not been in position to consider any of these matters except the questions of inequality which have speedily become so far-reaching as to convert themselves into the more general questions.

The fact is that the problem in its present dimensions covers the entire field of railroad wages. The hopelessness of dealing with it through consideration of claims pressed by the employees on the ground of inequalities has been thoroughly demonstrated by the experience of the Railroad Administration. Practically every class of railroad employees has felt that some other class has received more favorable treatment and has complained accordingly, and has presented plausible arguments in support of its claim. The result is that the wage board, composed of experts representing both the managements and the employees, has been wholly unable to agree upon a single one of these cases. My

discussions of the past week have made it clear that even if there were time to reach conclusions which would call for readjustments as to particular classes, this would be wholly unsatisfactory as to the other classes and would make no progress toward a complete solution. These difficult conditions are the inevitable outgrowth of the radical changes which have taken place in wage levels both on the railroads and in all other industries as a result of the conditions created by the war, and nothing short of the comprehensive action which I recommend can be expected to compose the situation. Suggestion had been made that this matter should be temporarily dealt with by a uniform or flat increase of a certain number of cents per hour to all railroad employees. My study of the general situation has convinced me



From the Baltimore Sun

Woodrow Is Back On the Job

that no such action would be justified and it would merely accentuate the complaints as to the inequalities, and that the matter must be disposed of upon the broad general issues.

As to the three important general issues thus presented, the situation at the moment is as follows: There is no showing now before the Railroad Administration upon the basis of which a correct conclusion could be immediately drawn as to the average wages paid throughout the United States in private industries for service similar to those rendered by railroad employees or for measuring reasonably the degree and extent of similarity. There is no showing before the Railroad Administration from which could be immediately deducted a just conclusion as to what is a fair minimum wage to be used for application throughout the country. The showings as to the extent of the increase in the cost of living and as to the extent of the increase of wages of railroad employees are not entirely agreed upon and a just conclusion in regard to them cannot be immediately reached. I believe all these matters can be promptly cleared up by the adoption of the course which I recommend, but it is impossible to conduct such inquiries to the point of completion and final action in regard thereto prior to March 1.

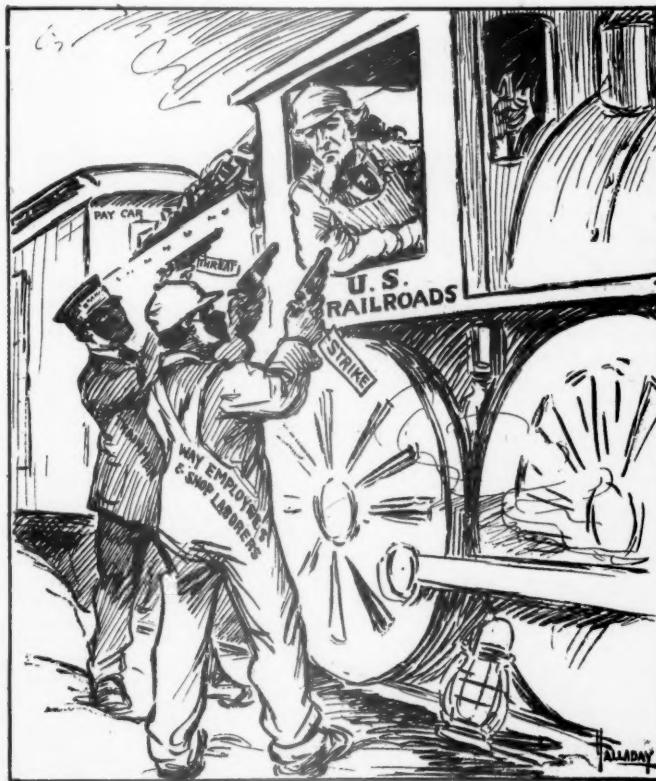
It is impossible for the Railroad Administration to dispose of such comprehensive and far-reaching problems in the remaining 17 days in which it will have jurisdiction and with such an expiring jurisdiction the Railroad Administration could not justify itself to the country in settling permanently for the future a problem of this character which involves so much both to railroad employees and the public which in some form must bear the cost of railroad wages.

While I am not able, and ought not, to prejudge the questions when I am precluded from assuming jurisdiction to decide them, and while I feel that many classes of railroad employees are under misconceptions which will largely be removed as a result

of a comprehensive disposition which alone can settle the matter, it is only fair to point out in behalf of the employees that they feel greatly concerned on account of existing conditions. Many employees feel that they are less well paid than workmen in other industries; many feel that other railroad employees have received more favorable treatment; many feel that they do not receive sufficient to enable them to maintain a fair standard of living. Each group of employees naturally thinks only of its own problems and does not appreciate how much more difficult that problem is made by the claims asserted by the other groups. The employees of course are unable to understand why these matters have not already been settled. They anticipate great delay on account of the transition to new methods of procedure.

I am convinced that it will be impossible to arrive at a satisfactory status in this matter until the pending problems can be passed upon by agencies appropriate to deal with them after the expiration of the present federal control, and I am equally convinced that it will not only be fair to the employees but distinctly in the public interest to take such steps at present as will insure the promptest possible disposition and the avoidance of delay which otherwise would be incident to the necessary termination of the jurisdiction of the Railroad Administration.

I therefore recommend that you indicate your purpose to cause the formation at the earliest possible date of a tribunal with power to carry these matters to a conclusion, such tribunal to be formed by voluntary action, if a tribunal is not created by law. I further advise that you promptly appoint a committee of wage experts to take available data and deduce therefrom as soon



From the Providence Journal

The Jesse James Game Over Again

as practicable the facts pertinent to this problem. The reports of such a committee will serve as a guide to you in carrying out the policy which you announced last summer to see that justice was done to the railroad employees and I believe will greatly expedite the disposition of the matter. I think an effort should be made to get the railroad corporations to co-operate in the formation of this committee.

The employees are apprehensive that there will be further delay which may be of an indefinite character merely to await future developments concerning the cost of living and it seems to me that they ought to be reassured on this point. My thought is that if the Railroad Administration were a continuing author-

ity, it should now take the position that these broad wages questions should, without being further held in suspense, be carried to a conclusion as soon as the available evidence on all the general matters so far held in abeyance could be duly considered. I believe the same policy will be reasonable under private control, and in fact, that it will be in the public interest to get these matters put at rest as soon as possible.

I am aware that some elements of the public may criticize the recommendations I make on the ground that the Railroad Administration ought to decide these matters finally and not leave them open to be dealt with after the railroad companies resume control. This criticism, however, would not be warranted by the conditions, because, first, it is physically impossible for the Railroad Administration to dispose of these matters; second, to the extent that the Railroad Administration might hurriedly dispose of them adversely to the employees, the disposition would not be final and they would immediately be presented under conditions of great discontent to the railroad corporations and would be pressed for early decision; and, third, to the extent that decision might hurriedly be rendered by the Railroad Administration in favor of the employees, such decision would be strongly represented by the public on the ground that a matter of such great importance, which involves exclusively the future of relations of railroad employees to railroad transportation, ought not to be settled with finality by a temporary governmental agency whose jurisdiction is on the point of terminating.

Statements by the Labor Organizations

There were also made public letters of February 9 and February 11 to Mr. Hines, signed by the executives of the labor organizations except the trainmen and the maintenance of way employees. The first letter outlined the demands of the organizations in part as follows:

In your memorandum read at these conferences, you state, in part:

"I wish to state my distinct conviction that the present cost of living cannot be regarded as permanent and that it is even more clear now than it was last summer that the cost of living will soon reach lower levels."

After a further extended summary of the situation, you state:

"I believe more than one leader of organized labor has frankly expressed the view that a general increase in wages will not effectively solve the problem."

Then, in conclusion, you suggest three methods of procedure, as follows:

(1) "One is for the railroad employees themselves to defer for a reasonable additional period the question of general increases in wages, awaiting further light as to the permanency of the present cost of living levels."

(2) "The second is to defer the matter at least until adoption of legislation which apparently will be adopted soon for the purpose of presenting it for consideration to the tribunals which will then probably be created in some form to deal with this problem."

(3) "The third is for me to co-operate with the railroad employees in finding a method at present to begin a careful study of the facts with a view to expediting to that extent the final consideration of the problem."

At the conclusion of reading this paper you requested full and frank discussion, and we pointed out the following facts:

(1) August 25, President Wilson requested that the government be given a reasonable time to establish success or failure in its efforts to reduce the cost of living, and if then failure resulted railroad employees' wages should be increased.

(2) Railroad labor felt the position taken by the President was wrong, in that he should have been willing to grant them immediate relief by increases in rates of pay, which would have placed them on an equal plane with labor in other industries where similar services are required and rendered, and established an equitable wage upon the true American standard of living and in keeping with the service required and hazards assumed.

(3) Then, after placing railroad labor upon this equal basis with other labor and in a position to live rather than merely exist, effective efforts to reduce the cost of living should be made.

(4) Notwithstanding this keen disappointment railroad labor has waited nearly six months, bearing the unequal burden, and now the government has failed to reduce the cost of living.

(5) Congress has failed to meet the emergency notwithstanding the fact that the President, in his message on August 8, dealt with the high cost of living quite thoroughly and made recommendations as to legislation.

In this same message he also outlined the immediate policy of the government in its efforts to deal with profiteering.

Again, on December 2, President Wilson addressed Congress on the cost of living, making further recommendations as to legislation, after forcefully calling attention to the failure to act upon his former message.

In considering the President's policy as announced August 25, railroad labor had carefully analyzed the President's message of August 8 and expected that Congress and the government would afford some immediate relief. With this in mind railroad labor willingly agreed to wait a reasonable time. However, Congress and other federal authorities have failed to afford the relief, and the cost of living has not been reduced, but, on the contrary, has advanced.

In reference to the conviction which you have expressed that the cost of living will reach lower levels, we are fully aware that the statistics or index numbers of prices at this season of the year customarily show a temporary reduction. This has been the case, as you know, even during the period of the war when the cost of living was constantly mounting. These reductions are but temporary, extending over a few weeks, and are due to market conditions during such periods and do not indicate any permanent tendency. Thus far in this year the acuteness of the present increase is emphasized by the fact that these temporary changes have not even been indicated, but if they should appear all students of prices realize they are but temporary.

Much prominence has been given to the activities of the Department of Justice in eliminating profiteering and reducing prices, but so far their efforts have been ineffective and the most authoritative sources of information in industry and commerce, instead of holding forth any hope of a reduction through these agencies in the future, claim that they will be a failure, and prices will be higher next year than this.

You have also made reference to the fact that the present demoralization of foreign exchange will react upon the markets of our own country by throwing some goods upon the market and reducing prices. Upon serious reflection, however, we feel sure that you will agree with us in concluding that the possibility of any price reduction in this connection is very remote and would afford no permanent benefit for two reasons: (1) Under our present system of arbitrary price control and profiteering it would require a much larger supply of goods than these foreign exports to demoralize the system, and (2) to assume that we would reduce prices permanently by this method would be equivalent to saying that we shall permanently refuse to fulfill our obligations to the impoverished people of Europe by failing to send them needed food and supplies. Undoubtedly our international obligations will soon lead to the adoption of proper measures for stabilization of exchange.

You suggest gathering data showing the basic rates for 1915 and 1919. This is not necessary, in our opinion. For at least two years agencies of the government created to deal with the railroad problem have been gathering this data and it is available. We also have all necessary data, much of which has been submitted to your Board of Railroad Wages and Working Conditions several months ago and is now a matter of record with the United States Railroad Administration.

To all of our requests for immediate relief you answer by saying that it is a physical impossibility to comply on account of the apparent immediate end of government control. We do not desire to do anything which will interfere with continued operation of the systems of transportation and distribution, but we must have relief from the present unfair and impossible burdens of railroad labor. With this thought uppermost in our minds, may we ask that you promptly advise if you will join us in the following recommendations to the President:

(1) That railroad wages be promptly adjusted by the President (a) so as to equal the wages paid in other industries where similar or analogous service is rendered; (b) to meet the increased cost of living; (c) wherever the application of the two foregoing principles does not yield an adequate wage, to establish an equitable and living minimum wage based upon American standard of living, with proper differentials, having regard for skill, hazard and responsibility. (By the term "equitable" and living

minimum wage" we do not mean a mere subsistence wage but a minimum wage sufficient to maintain a railroad man's average family on a standard of health and reasonable comfort and in addition enable him to set aside a sufficient amount for old age and disability.) And (d) all of the above adjustments by the President to be effective as of May 1, 1919, to those employees in service on that date and to those who entered since that date and remain in railroad service until February 29, 1920.

(2) That the President urge Congress promptly to pass necessary legislation to make possible, among other things, reduction in the cost of living, elimination of profiteering, excessive profits, interference with distribution by hoarding, speculation in futures, proper restriction of exports. This to be given precedence over any and all other legislation.

(3) The departments of the government to be organized in such a way as to secure the fullest co-operation in reducing cost

sufficient to maintain a standard of living above a mere subsistence level.

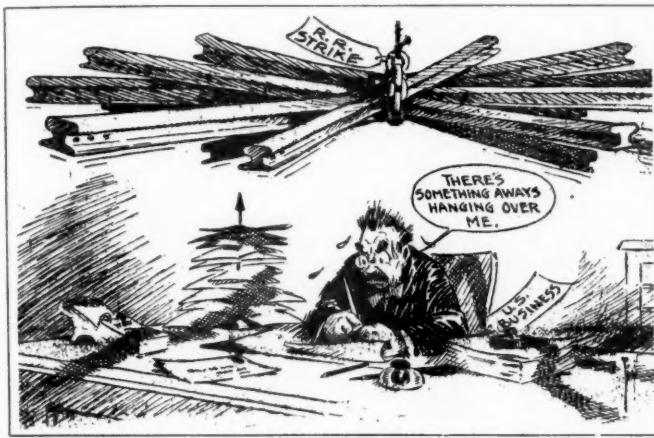
In the light of this deplorable situation, we earnestly appeal to you, as director general, and, through you, to the President, on the ground that it is your solemn duty to take such action before the termination of public control as will result in restoring the earning power of railroad employees and establish a basic minimum wage which will secure to all railroad employees at least the guarantee of a living wage sufficient to maintain their families on a basis of health and reasonable comfort.

Irrespective of the devotion and sacrifice of railway employees during the war, we cannot escape the conviction that you, as director general, should consider it a privilege to be the instrument for bringing about the same guarantee to railway labor, as a condition precedent to the return of the railroads, as are being extended to railway capital by legislation proposed in Congress.

The primary objects put forward in the pending railroad legislation are twofold: (1) To make financial provision by which the railroads that have been under government control since January 1, 1918, shall be returned to their private owners unimpaired; and (2) to enact financial arrangements by which even the roads that were financially weak or impoverished before the war shall be placed upon a financial basis guaranteeing to capital a minimum return.

We consider it your duty to see that the same principles which are to be applied by Congress to invested capital, or the mere physical elements in the transportation industry, be also applied by you to the employees, or the human element.

During the period of the war railroad employees, as you know, gave themselves without reservation to the service of their country. They did not consider the war a period for making excessive



From the Chicago News

Business As Usual

of living as is permitted by present laws and in keeping with the powers of the government to meet an extreme emergency.

Your co-operation in this will be greatly appreciated.

The supplementary letter of February 11 was as follows:

Supplementing our letter presented to you on February 10, we wish most earnestly to submit for your consideration what we conceive to be the fundamental injustice in the present disposition of the railroad problem.

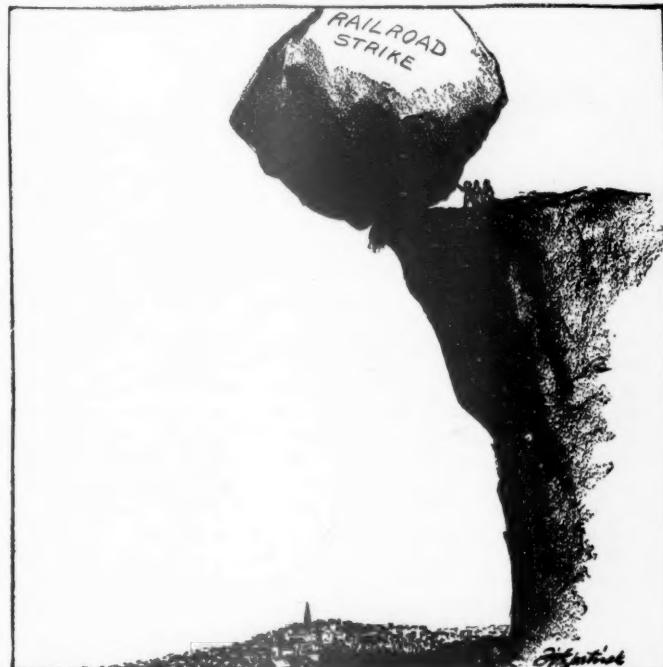
Under private operation the railroads were unable to meet the emergency arising out of the war and the President took charge of them to assist in winning the war. The government guaranteed to railroad capital a return based upon an average pre-war earning without any provisions for adequate treatment to railroad labor.

Preparations are now being made in legislative form by which the period of government control is to be terminated and the transportation industry returned to its private owners, with all its resources unimpaired and with careful provisions for protection of capital and no provisions for protection of labor.

The fundamental theory underlying the present action by the Congress is that the war was an emergency period in which the transportation facilities were to be used for the common good and were to be returned, unimpaired, at the termination of the war period.

On the other hand, while this action is being taken to rehabilitate the transportation industry and guarantee the integrity of invested capital, no measures are being put forward for the protection of railroad labor.

We feel sure that you will agree with us that the human element, from a broad standpoint, is of more importance than the corporate factors in the transportation industry. We believe, however, that if the corporate element is to be recognized the human element should receive like recognition and treatment. At the present time, however, when every provision is being made to recompense capital we find that railroad employees are not earning a sufficient wage to even maintain pre-war standards and that many of these employees are not earning an amount



From the St. Louis Post-Dispatch

A Menace to All

wages. Neither did they consider it a period for profiteering, but rather a time for patriotic service and sacrifice. They felt that when the emergency was passed and the public had time to consider the facts, any inequalities from which railroad employees suffered would be rectified. As a consequence they continued at their posts during the period of government control despite the fact (1) that their rates of pay had not been increased proportionately with the cost of living since 1914, and (2) without regard to the fact that employees in similar work in other industries had received much higher rates of pay than railroad workers; and we must now insist that the obligations of the Railroad Administration be promptly met.

In the third place, we would direct your attention to the fact that in the case of a great many classes of railroad employees the

purchasing power of their earnings before the war was not sufficient to maintain even a mere subsistence standard of living for their families, not to mention a level of living of health and comfort. To increase the rates of pay which these employees received before the war to correspond with the increase in prices since the beginning of the war would be merely equivalent to perpetrating inadequate and deplorable standards of living which prevailed prior to the outbreak of hostilities. These employees should, therefore, just as in the case of the railroads which were financially weak in 1914, be rehabilitated or placed on a sound and just basis of earnings.

Considerations of elementary economic justice absolutely require that these groups of railroad employees, irrespective of wage increases received during the war period, should now, when the war emergency is passed, have their rates of pay adjusted to the basis of a living wage as a preliminary to the return of the railroads to private ownership, or, in other words, that they should now be assured rates of pay which would enable them to support their families, both now and in the future on a basis of health and reasonable comfort.

Railroad companies, according to the plans of pending legislation, which were operated at a financial loss before the war, are now to be placed upon a financial basis which will guarantee substantial returns to capital whether earned or not. By a similar method of reasoning railroad employees who were inadequately paid before the war likewise should be placed by the United States government upon a proper wage which will enable them to meet all their legitimate and necessary obligations.

The Railroad Administration or the public cannot and should not wish to take the attitude of rehabilitating and guaranteeing returns to railroad capital without at the same time establishing adequate wages for all railroad employees. In other words, a guarantee by the public of a return to all forms of railway investments should carry the obligation of a fair return to railroad labor.

Director General Hines Warns of the Consequences of a Strike

Director General Hines on February 13 gave his reply to the maintenance of way employees in a letter to President A. E. Barker, which he delivered to the committee which had called on him. On Saturday he telegraphed the letter to Mr. Barker at Detroit asking that the delegates to his convention give it careful thought. Mr. Hines said in part:

Your letter, dated December 4, urging speedy action, was received on December 11 and was promptly taken up with the Wage Board. You were advised on December 23 that the board would report at an early date. On December 30 you called on me and again explained the importance of speedy action. On December 31 the members of the Wage Board submitted their divergent reports on your and other important matters, necessitating in the division of operation and labor careful analysis and comparison which was expedited as much as possible. By January 23 it had become apparent to me that your matter and the others pending were related to each other in so many ways that they must be considered as a whole and with reference to the early termination of federal control. I therefore telegraphed you and other chief executives of principal organizations requesting a conference on February 3. Your organization proceeded, however, to hold a convention which took action before our conference had been concluded, and necessarily without the full information as to conditions which your organization would have had if it had deferred action until the conference was concluded. Your organization never even attempted to give notice that you would discontinue performing the work contemplated by your national agreement until the 11th instant, the date your committee sought to see me, which was only six days before the strike was to become effective, and your strike order was not even announced through the newspapers until the 9th or 10th instant.

The national agreement clearly contemplates that your organization as such will continue to work thereunder in accordance with the hours and working conditions therein provided and in accordance with the wages specified in the director general's orders, until a change in policy shall be adopted on not less than 30 days' notice. The government regards your strike order on

less than 30 days' notice as a repudiation of the national agreement which your organization sought and assumed. This mistaken action, if not corrected, will be regarded as conclusive evidence of the complete failure of the principle of collective bargaining on the part of your organization.

The strike, of course, will automatically terminate your national agreement and thereby you will completely destroy the status which you so earnestly sought such a short time ago, and at the expiration of federal control your organization will have no recognized and established working conditions, thus putting the railroad corporations in the best possible position to claim that there is no basis whatever for them to recognize or deal with your organization or to respect any working conditions or other advantages which you may have secured under this agreement. I believed that this national agreement constituted a great forward step for your organization and improved your status to a much greater relative extent than was the case of any other organization. I am, therefore, wholly unable to understand the policy which now proposes to end this valuable status on the 17th instant without the faintest hope of its being revived.

In conclusion I specifically advise that for the preservation of your organization and its present status under its national agreement, as well as for the urgent public reasons expressed by the President, you at once take steps to prevent the carrying out of the strike order on next Tuesday. I ask you to make it perfectly clear to every member of your convention that if at this stage the strike takes place it will be a strike solely because your organization is unwilling to co-operate in the procedure proposed by the President of the United States. The government cannot possibly recede from its position, so that the strike offers no hope of accomplishment for your membership and promises merely the loss of your existing status, and will merely delay rather than expedite the just solution which the President is seeking, and in which he asks your support. I take it you cannot refuse to comply with his request that his message and my report be sent to your individual members for their consideration and meanwhile it would seem to be out of the question for you to commit that membership to a strike fraught with so much disadvantage to it without the possibility of any advantage whatever.

"I feel that on account of the undoubtedly pressure from your membership, your convention has been driven into a position which it would not have taken if it had first considered the full explanation of the inevitable and unalterable position of the government as explained in the President's statement and in my report to him, and that in the light of these new developments you will be enabled to modify your action and thus protect your interests and avoid getting into a false and untenable position which can never be sustained or justified.

The President also telegraphed to Mr. Barker saying that he noted with surprise and disappointment that the maintenance of way organization was the only one addressed which had not expressed its concurrence in the method which he had proposed and he asked that the necessary steps be taken at once to withdraw the strike order. "I feel sure," he said, "that you and your associates upon full consideration realize that you cannot in justice to your membership and the citizens generally of the United States persist in a course which is opposed to your obvious duty to the country, to the government and also to the attitude of all other railroad labor organizations, all for the purpose of objecting to the procedure which I have proposed, which is the only practicable method of obtaining a prompt and reasonable settlement of the important wage questions now pending."

In notifying Mr. Hines of the postponement of the strike Mr. Barker said: "It is evident our committee did not desire that the maintenance of way brotherhood should be driven into a position seemingly forgetful of the public interest due to unfriendly interests, including the avenues of information by which the people can be reached, the people being ignorant of actual conditions among these railway workers. I desire to impress upon you with all the force at my command the absolute necessity of relief for our members immediately if a most serious situation from which there will be no retreat is to be avoided." He said he was confirmed in his belief

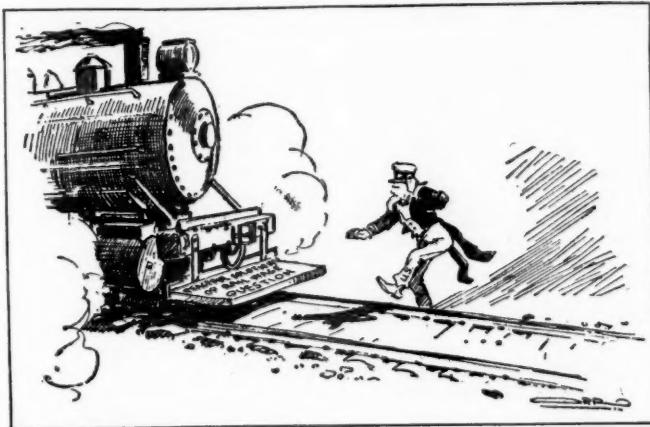
that strike action would have been "eminently justified" to force favorable action on the wage demands.

In a public statement issued Saturday night the executives of the railroad labor organizations urged the necessity of early relief to meet "the intolerable burden of the high cost of living." They also said that "the American people need not fear that such wage increases as may in justice be granted us will prove a step in the so-called 'vicious cycle' of ever-increasing prices and resultant higher cost of living provided the forces of the government are alert and determined to prevent undue profiteering and that Congress will pass remedial and corrective measures recommended by the President." The public should be on guard, they said, against "the conscienceless pyramiding of profits" rather than the "increasing circles of costs incident to giving labor a living wage," because, "labor, assured of uniformly fair treatment,

they have objected to any power to force their acceptance of a decision not agreed to by their own representatives. Their reply to the President, therefore, contemplated only a bi-partisan commission which would give the public interest no voice in the decision and on which the railroad representatives, under the provisions of the Esch-Cummins bill, would hardly be expected to have the same selfish interest in holding down the general level of labor costs which was usually attributed to them under former conditions when there was great uncertainty as to the extent to which wage advances would be recognized by the rate-fixing tribunals. Under the plan of the new bill the question of wage increases becomes one of more direct concern to the public than to the railroads.

After receiving Mr. Hines' suggestions the conferees changed their plan considerably, increasing the membership of the board of labor appeals to be appointed by the President from 5 to 9 members and inserting a provision against a possible agreement of the railroad and labor representatives not assented to by at least one representative of the public. It was also decided to give the board original and final jurisdiction and to take from the adjustment boards the settlement of other than local disputes which might tend to cause a general interruption of interstate commerce and to avoid the possibility of different treatment of different classes of employees by different boards by placing jurisdiction over such general controversies as that now at issue in the hands of the higher board.

The standing committee of the Association of Railway



From the Chicago Tribune

Don't Miss That Step

will always, through greater efficiency and a desire to return a square deal for a square deal, hold labor costs on a sound economic level by increasing production or service."

Conferees Seek to Protect Public Interest

Whether the passage of the Esch-Cummins bill, providing for a very different kind of wage tribunal from that proposed by the labor organizations, will arouse a new "crisis" or settlement, has not yet been made clear. One of the principal problems with which the Congressional committees and the conferees have struggled in the drafting of the railroad bill has been that of providing adequate machinery for dealing with just such a question as that now presented. The conferees had agreed upon a system of adjustment boards composed of equal numbers of representatives of employees and of the managements, who will not be government officials, to adjust controversies which the companies and their employees cannot adjust "at home," but also on a higher board of five members to be appointed by the President to render decisions on appeals from the adjustment boards and also to some extent to pass upon their decisions for the purpose of protecting the public interest.

The necessity for a tribunal to represent the public has seemed vital to the conferees, particularly since the bill requires the Interstate Commerce Commission in fixing rates to take into consideration the necessary elements of cost, including wages, and then to endeavor to produce an average return of $5\frac{1}{2}$ per cent on the aggregate value. The railroad labor organizations have for several years been violently opposed to the idea of any referee, neutral member or ultimate representative of the public who would be placed in a decisive position on wage tribunals, partly because they have insisted that the neutral member did not fully understand the complicated wage schedules, and partly because



From the Chicago Tribune

Can They Make the Grade With That Load?

Executives was to confer with Mr. Hines and Railroad Administration officers at Washington on Thursday to discuss the various proposals, and it was understood that after a meeting with representatives of the labor organizations after their convention on February 23 the expert commission proposed by the President would be appointed to begin the investigation in order to save time, but to turn its findings and data over to the board created by the Esch-Cummins bill for a decision. As finally adopted, the language of the bill provides for compulsory arbitration of such controversies, but without a penalty.

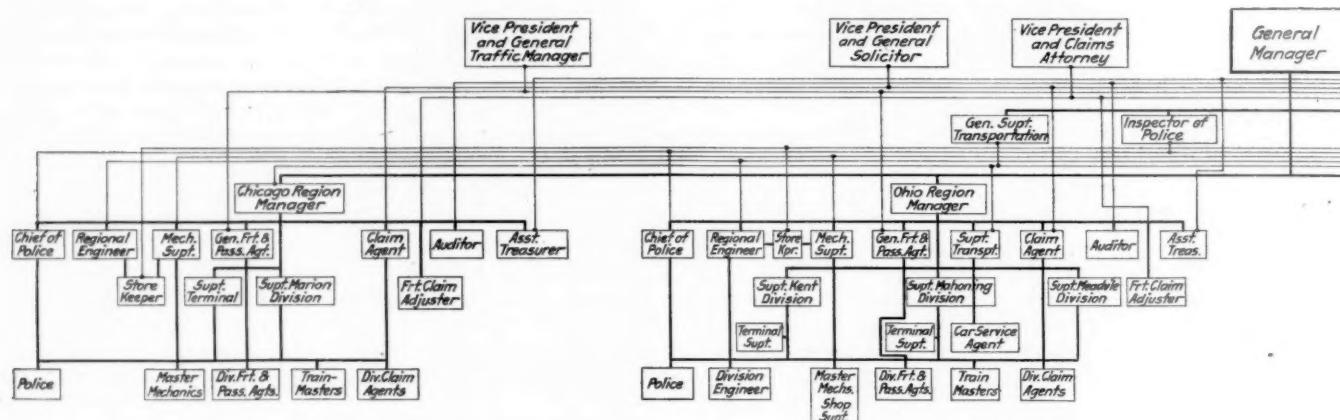
AUTOMOBILES shipped by freight on railroads of the Eastern Region in the first ten months of 1919 filled 183,495 cars, or enough cars to make a train about 1,500 miles long. This figure is given here by way of correction of an erroneous statement printed in our issue of January 30, page 377, where the annual report of the regional director for the Eastern Region was quoted as giving the number of cars loaded with automobiles as 18,495. It is to be remembered that it is in the Eastern Region that the city of Detroit is situated; also several other automobile centers.

Radical Changes In Erie Railroad Organization

Designed to Permit Better Supervision and Co-operation
with Employees and Public.

WITH A VIEW to securing more adequate supervision and in order to permit the officers to keep in closer touch with the public and the road's employees, the Erie, on its return to private control, will effect a rather radical organization of its official personnel. The outstanding feature of the new plan is the establishment of four

superintendent, a chief engineer, a general storekeeper and an inspector of police. The regional engineer, regional superintendent of transportation, regional general freight and passenger agent, etc., will each report directly to the regional manager but in order that their work may be properly co-ordinated they will also report indirectly to their respective

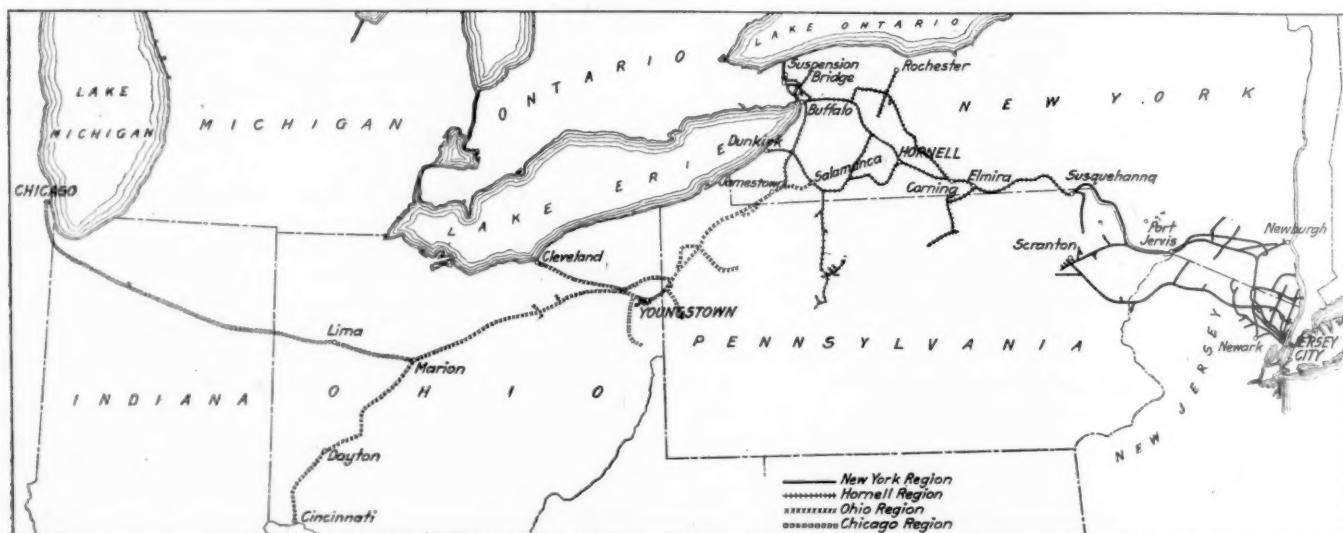


The Erie's New Organization—This Section Shows the Chicago and Ohio Regions

regions, each, with one exception, consisting of three or more operating divisions. Each of these regions will be placed in charge of a manager who, reporting to the general manager, will be in practically entire charge of all phases of work done in his particular region. With this in mind each regional manager is to have a regional engineer, a mechanical superintendent, a general freight and passenger agent, a su-

perintendent, a chief engineer, a general storekeeper and an inspector of police. The regional engineer, regional superintendent of transportation, regional general freight and passenger agent, etc., will each report directly to the regional manager but in order that their work may be properly co-ordinated they will also report indirectly to their respective

officers on the general manager's staff or to the other officers at the head of the railroad organization as the case may be. To take a case in point, each regional general freight and passenger agent will be in entire charge for his regional manager for freight traffic originating in his region. The traffic of the four regions will be co-ordinated through the office of the vice-president in charge of traffic, and in turn



Map of the Erie Showing the Four Newly Created Regions

perintendent of transportation, a claim agent, an auditor, an assistant treasurer, a storekeeper and a chief of police. The former divisional organization is to be retained and the superintendents of the several divisions will each report to the manager of the region in which they are included.

The general manager's organization is to consist of a general superintendent of transportation, a general mechanical

superintendent, a chief engineer, a general storekeeper and an inspector of police. The regional engineer, regional superintendent of transportation, regional general freight and passenger agent, etc., will each report directly to the regional manager but in order that their work may be properly co-ordinated they will also report indirectly to their respective

agent. Purchasing will be done by the office of the vice-president in charge of purchases.

It is understood that the changes in the Erie organization have been under consideration for some time. As already stated they are to be carried out as a result of a desire to bring about better supervision over operation and secure better co-operation with the public and employees. They are also made to avoid over-centralization.

The four regions which will be formed are shown on the diagram of the new organization and the map of the railroad. They are as follows:

New York Region. This will include the lines from Jer-

sey City to Susquehanna and branches, or more specifically the New York, Delaware and Wyoming divisions; the New York, Susquehanna & Western, and the terminals and light-erage in New York harbor. The headquarters for the region are to be at Jersey City.

Hornell Region. This will include the lines from Susquehanna to Rochester, Buffalo, Dunkirk and Salamanca and branches, or the Susquehanna, Rochester, Buffalo and Allegheny divisions. Headquarters for this region are to be at Hornell.

Ohio Region. This will include the lines from Salamanca to Cleveland and Cincinnati and branches or the Kent, Mahoning and Meadville divisions. Headquarters are to be at Youngstown, Ohio.

Chicago Region. This will include the Chicago & Erie and branches from Chicago to Marion, or the Marion division and the terminals at Chicago. Headquarters are to be at Chicago.

The appointments that will be necessary to carry out the extensive reorganization in question are at the time this article is written only partly been made public. Those that have been announced are given below; it is hoped to have the remainder in an early issue of the *Railway Age*.

F. D. Underwood, president of the Erie at present, will on the termination of federal control remain as president and become also chairman of the executive committee.

George F. Brownell, prior to federal control vice-president and general solicitor and at present holding the same position for the corporation, will take the title of vice-president and general counsel, in charge of legal and financial matters.

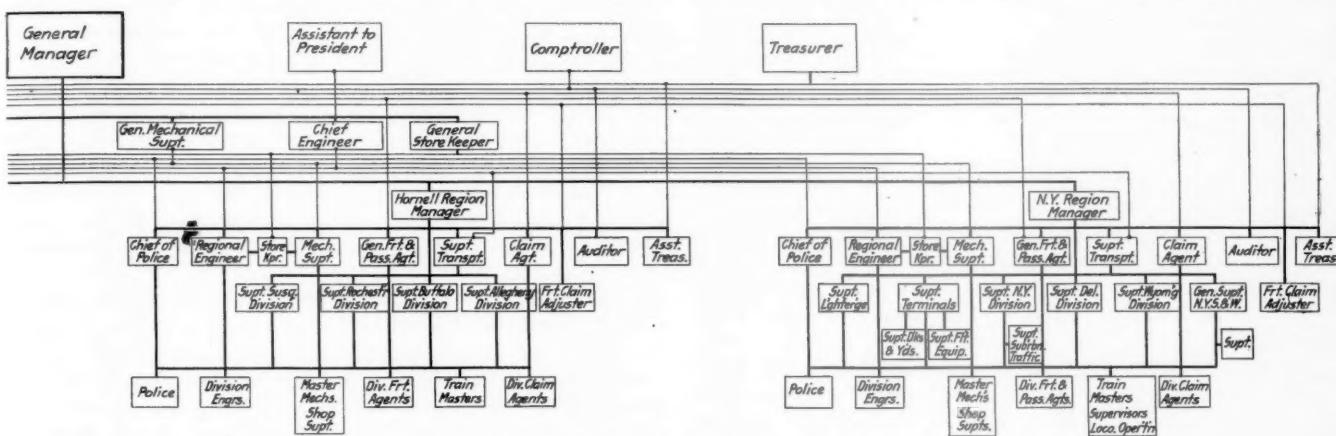
George H. Minor, prior to federal control assistant general solicitor, and at present vice-president and secretary of the corporation will have the same title and will be in charge of real estate, taxes and insurance.

George N. Orcutt, prior to federal control vice-president in charge of purchases, real estate, taxes and federal valuation, and during federal control a vice-president of the corporation will have the same title on the resumption of private

control, but will be in charge of federal valuation, contracts for material and supplies and freight claims.

T. C. Powell, as has already been announced in these columns, will be vice-president in charge of traffic. Prior to federal control Mr. Powell was a vice-president of the Southern Railway, lines west, in charge of traffic. More recently he has been director of the Division of Capital Expenditures and chairman of the claims committee of the Railroad Administration.

Robert S. Parsons takes the important position of general manager. Prior to federal control he served as assistant to president and chief engineer, later as assistant to president



The Erie's New Organization—This Section Shows the Hornell and New York Regions

and general manager, and during federal control as chief engineer.

Robert C. Falconer becomes assistant to president and chief engineer. Prior to federal control Mr. Falconer was assistant chief engineer and more recently he has been chief engineer of the corporation.

August L. Sorenson becomes controller. At present he is general auditor for the corporation.

William J. Moody has been elected treasurer. At present Mr. Moody is serving as assistant treasurer of the corporation.

Orders of the Regional Directors

VACCINATION AGAINST INFLUENZA.—Circular 301 of the Central Western regional director, states that the regional committee on health and medical relief has decided that the positive usefulness of any of the measures of vaccination against influenza so far proposed, has not been demonstrated and that it deems it unwise at the present time to recommend general vaccination for this purpose.

Bills of Lading.—Circular 300, cancelling Circular 282, of the Central Western regional director, contains instructions governing the issuance of through export bills of lading via North Atlantic ports, which supersede all previous instructions.

Damage to Eggs by Stoppage of Drain Pipes.—Circular 265 of the Southwestern regional director states that considerable damage has been done to eggs in transit by overflow from drip pans, due mainly to neglect to remove accumulations of dirt in the drip pans. The circular states further that instructions are generally in force requiring that bunkers, drain pipes and drip pans shall be inspected and cleaned thoroughly before loading a car which is to move under refrigeration. Suggesting further that floor racks should be used wherever available, the circular requests that these matters be brought to the attention of all concerned, to the end that avoidable damage may be reduced to a minimum.

Railroad Officers to "Return from the War"

ONE of the interesting phases of the big change that is to be made on March 1, when the railroads are returned to private management, is that of the shifting of personnel that will take place at that time when the Railroad Administration relinquishes its power and the corporation executives resume the direction of operation.

In general most of the executives who were not taken over by the government will be in charge after March 1, although naturally time has brought some changes. Also some of the men who have been in charge for the government are not to be taken back by their companies, or for some reason will not go back, but apparently the large majority will return to their former positions. In some cases they have formed new associations during their service for the government.

The demobilization of the Railroad Administration has been in progress for a sufficient length of time to indicate where most of the principal officers that have been directing its affairs are to take up their work on March 1. Director General Hines has announced that he intends to remain in charge of the winding up of the affairs of the Railroad Administration for about two months, after which he intends to have a good vacation and then he plans to resume the practice of law in New York. Announcements have now been made of the plans of most of the regional directors and of the directors of divisions of the Central Administration. A. H. Smith, the first regional director to resign, returned to the presidency of the New York Central system early in 1919. C. H. Markham also resigned some time ago as regional director of the Allegheny region, to resume his former office as president of the Illinois Central. More recently announcement has been made that Hale Holden, regional director for the Central Western region, would return to the presidency of the Chicago, Burlington & Quincy; B. F. Bush, regional director for the South Western region, to the presidency of the Missouri Pacific; N. D. Maher, regional director of the Pocahontas region, to the presidency of the Norfolk & Western, and L. W. Baldwin, who succeeded Mr. Markham as regional director of the Allegheny region, to his former position as vice-president of the Central of Georgia, effective on the termination of their connections with the Railroad Administration about March 1. Later Mr. Holden's resignation was made effective on February 15.

No announcement has been made as to R. H. Aishton, regional director of the North Western region, but it is understood he will not return to his former office as president of the Chicago & North Western. A. T. Hardin, who succeeded Mr. Smith as regional director of the Eastern region, it is understood, will return as vice-president of the New York Central. No announcement has yet been made as to B. L. Winchell, regional director of the Southern region, who was director of traffic of the Union Pacific system prior to federal control.

The first resignations as directors of divisions came in January, 1919, when R. S. Lovett and C. R. Gray resigned as directors of the divisions of capital expenditures and operation, respectively, to return to their companies, Judge Lovett as president of the Union Pacific and Mr. Gray as president of the Western Maryland. W. T. Tyler, who succeeded Mr. Gray in the division of operation, has now been elected vice-president in charge of operation of the Northern Pacific, a promotion from his former position of assistant to the vice-president. Edward Chambers, director of the division of traffic, is to return as vice-president of the Atchison, Topeka & Santa Fe. T. C. Powell, director of the division of capital expenditures, has already left to be-

come vice-president of the Erie. Prior to federal control he was executive vice-president of the Queen & Crescent system.

Max Thelen, director of the division of public service, is to remain after March 1 as director of the division of liquidation claims, which has taken over the work of the division of capital expenditures, and it is reported that he will later succeed Mr. Hines as director general. C. A. Prouty, director of the division of accounting, has been appointed an advisory member of the director general's staff in accounting matters. He is also director of the Bureau of Valuation of the Interstate Commerce Commission. No announcement has been made as to H. B. Spencer, director of the division of purchases, who was vice-president in charge of purchases of the Southern, although it is understood he is to be president of a refrigerator car line, nor as to Swager Sherley, director of the division of accounting, although it is understood he plans to leave promptly after March 1. W. S. Carter, director of the division of labor, is to return to the presidency of the Brotherhood of Locomotive Firemen and Enginemen. E. M. Underwood, general counsel, is to remain after March 1 in charge of the division of law.

G. H. Parker, who was recently appointed controller of the Railroad Administration, after having been financial assistant to the director general, will be in charge of the work formerly handled by the Division of Accounting, and D. E. Brown, assistant director of accounting, has been appointed assistant controller. Ralph Blaisdell has been appointed treasurer, succeeding C. A. Lutz, resigned.

No announcement has yet been made as to most of the assistant directors of divisions, although it is known as to many of them that they expect to return to their former positions. Gerrit Fort, assistant director of traffic in charge of passenger matters, who was formerly passenger traffic manager of the Union Pacific, left on January 1 to become vice-president of the Boston & Maine, and R. C. Wright, assistant director in charge of freight matters, will return to the Pennsylvania as general traffic manager. It is understood that H. P. Anewalt will also return to the Santa Fe. The telegraph section of the Division of Operation was abolished on January 1 on account of the resignation of Martin H. Clapp, manager, to accept service elsewhere. W. C. Kendall, manager of the Car Service Section, is to be chairman of the Car Service Commission, which will be created by the railroads, and will remain at Washington in charge of per diem and car service matters and co-operate with the Interstate Commerce Commission; several of the present assistant managers of the section will remain with him, but the complete organization has not yet been decided. It is understood that S. Porcher, who was purchasing agent of the Pennsylvania, and G. G. Yeomans, general purchasing agent of the New York, New Haven & Hartford, both now assistant directors of the Division of Purchases, are to return to their former positions. E. E. Adams, engineering assistant to the director of capital expenditures, has already returned to the Union Pacific as consulting engineer, and F. W. Sercombe, accounting assistant, is also to return to the Union Pacific.

E. M. Dunham, assistant chief engineer of construction, has been appointed chief of the department of way and structures of the Division of Liquidation Claims and will take over the organization now under the maintenance of way department of the Division of Operations.

Reports have been published in our personal columns of the changes from time to time among the federal officers of various roads and of the positions that they will hold under the corporate managements, but many are still to be announced.

The regional and district offices of the Railroad Administration are to be abolished on March 1.

Safety of the Cotton Belt Lines is Questioned

Issue Raised by President Herbert Leads to Extended Controversy with Railroad Administration

THE CONTROVERSY between President J. M. Herbert of the St. Louis Southwestern and the Railroad Administration with regard to the physical condition of that property has attracted wide attention, but aside from the matter of popular interest, this case is one of no little importance to railway officers, because it presents in tangible form some of the problems which will arise with respect to other roads before the Railroad Administration will be able to close its accounts with them. The fact that Mr. Herbert deemed it necessary to appeal to the state commissions and through the press to the public naturally gave the controversy more color than will characterize the procedure in the great bulk of the cases that will come up, but this very publicity has no doubt served to bring out more facts than would have been brought to light under ordinary procedure. The St. Louis Southwestern case also holds no inconsiderable degree of interest because of the background of bitter competition which has prevailed for years between the St. Louis Southwestern and two of its nearest neighbors, the Missouri Pacific and the Texas & Pacific.

From the inception of government management until the creation of the Southwestern region in July, 1918 the St. Louis Southwestern was opened as an integral property under the supervision of its president, J. M. Herbert, who also served for some time as inter-regional director for the Railroad Administration at St. Louis. Upon the organization of the Southwestern region the Cotton Belt was divided at the Texas state line. The portion in Texas was placed in a group of roads under the direction of J. L. Lancaster, federal manager and formerly vice president of the Texas & Pacific, with A. G. Whittington as general manager. The portion of the line in Missouri, Arkansas and Louisiana was grouped with the Missouri Pacific under Federal Manager A. Robertson, who had been vice-president of the latter road, while W. N. Neff, who had been general manager of the entire Cotton Belt system for a short time prior to federal control, was retained as general manager of this portion. Thus the two sections of the Cotton Belt were linked up with and operated as units of its two strongest competitors, the Texas & Pacific and the Missouri Pacific, and in a manner which, according to the corporate management of the road, has effected a serious depreciation of the physical property. It is also a contention that this situation was not materially altered when in March, 1919, the road was again organized as an independent operating property under the direction of Mr. Neff, who had been promoted to federal manager of the entire Cotton Belt system.

In view of these circumstances the following review of this case is restricted largely to certain matters of record and the abstracts of public statements or reports issued by the parties to this controversy or the public authorities who have been called into the case from time to time. No attempt is made to analyze the facts presented or to draw any conclusions, this being left entirely to the reader.

Maintenance Expenditures Restricted in April, 1919

The difficulty as to maintenance of way work dates back to April 1, 1919, when the director of the Southwestern region issued instructions to Federal Manager Neff that maintenance of way expenditures would be limited to \$2,000 per operated mile and that this total for the year would be made retroactive to January 1, 1919. The expenditures for January, February and March had totaled \$714.37 per mile

of line, or \$238.12 per month, leaving of the \$2,000 authorized only \$1,285.63 for the remaining nine months, or an average of \$142.79 per month, which is equal to a rate of expenditure for the year of \$1,714.

Mr. Herbert objected to this limitation on expenditures, contending that the road could not be maintained in a safe condition for this amount. He made representations to the director of the division of operation, and, following a conference in Washington, two representatives of the Railroad Administration made an inspection of the St. Louis-Southwestern, leaving St. Louis on June 13 and completing their work at Big Sandy, Tex., on June 19. In a report based on this inspection, it was recommended that an additional sum be expended for maintenance of way and structures on this property during the remainder of the current year to the extent of \$415,527. This was itemized as follows:

Roadway maintenance and tracklaying and surfacing.....	\$132,077
Bridges, trestles and culverts.....	212,633
Ties	70,817
<hr/>	
Total additional allowance recommended to maintain the railroad in safety for normal operation.....	\$415,527

The report also recommended that this additional expenditure be approved by and charged to the corporation. President Herbert declined to take the responsibility for this expenditure on behalf of the corporation until September 3, when he wrote to the director of the Division of Operation, stating that he was

"willing, in the interest of the safety of the public and the employees, that the \$415,527 recommended in addition to the unexpended portion of \$2,000 per mile per annum be expended, leaving the question of whether the administration or the corporation should be charged with the above amount open for future determination and with the provision that work should begin immediately."

This expenditure was authorized by the Railroad Administration on September 11, 1919.

Later in the month of September Mr. Herbert made a detailed inspection of the company's property in company with J. W. Kendrick, consulting engineer; A. A. Matthews, federal chief engineer; W. H. Vance, federal engineer, maintenance of way, and others, and a detailed report was prepared by Mr. Kendrick containing itemized statements concerning each section of track inspected by the party. The following is a typical statement from this report relative to one of these track sections:

From point on Mile 451 to Bassett (a distance of about $\frac{1}{4}$ mile):
30 joint ties skewed,
18 joints churning,
19 bolts missing at rail joints,
3 angle bars broken,
8 joint ties without spikes,
6 intermediate ties not spiked,
80 per cent of track centerbound and ties without end support and swinging from $\frac{1}{4}$ in. to 1 in.

About 35 per cent of ties rotten and about 45 per cent of ties skewed,
Ties not spaced and angle bars not slot-spiked,
13 soft-wood ties without tie plates,
Gage found to be 4 ft. 9 $\frac{1}{4}$ in. in two places,
Elevation of a 2-deg. curve very irregular,
Track found to be spreading just north of north switch at Bassett in three different places on inside of curve,
Ties on Bassett siding so rotten as to be unsafe for trains to use siding.

As a summary or conclusion as to condition of the property, the introduction to this report contains the following paragraphs:

"The inspection was made in order to ascertain the facts in relation to the condition of the tracks, President Herbert having taken the position that the property had not been properly maintained and that the tracks were in such poor condition as to make operation unsafe at the reasonable speeds for passenger

and freight trains specified by the time tables and followed in practice.

"In the light of the facts as developed by this inspection Mr. Herbert could take no other position and there was no dissent by any member of the inspecting party from his conclusions. . . ."

On September 29, during the course of this inspection, President Herbert addressed a telegram to the director general, in part as follows:

"I wish to record with you personally the very serious, even disgraceful physical condition into which St. Louis Southwestern System main tracks have been permitted to deteriorate during government control. Even at any reduced speed to which train service can be subjected, there are many unsafe places in track. I regret to have to say that the lives of the public and employees of the company are constantly at hazard, and I apprehend that this condition will continue throughout the coming winter unless drastic methods are immediately applied. I further regret to have to say that I think it is high time that someone who will give you a correct report of these conditions should be made to do so. I have data in detail which I shall be glad to give to anyone you may suggest."

Shortly after this he addressed a telegram to the Texas Railroad Commission calling attention to the condition of the road in the state of Texas, and intimating that it was the duty of the commission to make an immediate inspection with a view to having the conditions improved.

Director General Hines took direct issue with Mr. Herbert in a letter addressed to the Texas Railroad Commission on October 7. His main contentions were that the road was not unsafe and that maintenance during the test period was inadequate, so that the road was in "exceeding poor condition" at the beginning of federal control.

Mr. Hines wrote in part as follows:

"The Railroad Administration has recently made a very careful inspection of this railroad and has not found any such condition as is claimed by Mr. Herbert. The federal manager of the railroad reports that the property has been maintained in safe condition, although indicating that he would have preferred to spend a larger amount in maintenance.

"The fact is that the St. Louis Southwestern was maintained in exceedingly poor condition during the three-year test period, ending June 30, 1917, and was in exceedingly poor condition at December 31, 1917. The federal control act contemplates that the making of such expenditures upon a property as are necessary to return the property to the owners in the condition in which it was received by the government will constitute a full compliance with the government's obligation. Not only has this been done in the case of this railroad, but substantially more than this has been done. The best estimates which we are able to make up to the present time as to what would have constituted a full compliance with the principle of the federal control act, indicate that, after making allowance for the increased cost of material and labor, there had been an over-expenditure in the maintenance of way and structures on the St. Louis-Southwestern System of \$1,103,000 from January 1, 1918, to August 31, 1919, of which an over expenditure of \$247,000 was made on the St. Louis Southwestern of Texas.

"After taking into consideration such increase in business as has taken place on this railroad, we are satisfied that we have more than fulfilled any obligation which the government owes the railroad company and that we have done enough to keep the property in safe condition notwithstanding the exceedingly poor condition of the property at the beginning of federal control.

"During the first six months of federal control, Mr. Herbert, as president of the company, remained in charge of this railroad on behalf of the government. He mapped out and issued instructions for the carrying out of a very liberal program of maintenance, stating in a letter to one of his subordinate officials the view that there was practically no limit to which the officers on the railroad could go in building up the property. After the appointment of a federal manager directly representing the government, these instructions were modified because it was not the policy of the government to build up a property at the

expense of the government to a much better condition than it was when the government took it over."

In reply to this Mr. Herbert issued a statement on October 12, saying in part:

"Following a conference at Washington at the end of May, 1919, in the office of the director of the Division of Operation, at which time I stated to the director of the division and other representatives of the administration that the appropriation for the maintenance of this property for the year 1919 could not possibly continue it in a safe condition for operation, the Railroad Administration sent out from Washington two men selected from the subordinate forces at Washington, with instructions to make an inspection and report of conditions.

"These men passed over the lines of the St. Louis Southwestern on a special train, running over much of the track at a rate of 35 to 40 miles per hour, viewing the property from an observation car. Just how they were expected to arrive at anything like an approximate estimate of the condition of the property as of January 1, 1918, in running over it on a special train during the month of June, 1919, is unexplained. Nevertheless, one of these experts arrives at very positive conclusions; and, in his report, states the Railroad Administration is performing its full obligation in the maintenance of this property. However, he slips to some extent on page 3 of his report, in summing up the situation, when he makes the following statement:

"The enforced war activity of 1918 affected the St. Louis-Southwestern as it did other railroads and while the federal officers had authority to increase largely their expenditures for maintenance in 1918, they did not and perhaps could not always use the abnormal labor and material conditions to the best advantage in maintaining the property."

"He further states, 'The administration proceeded with the maintenance of way work in 1919 on the same program as in 1918 until approximately March 15, when they reduced the expenditure.' He says this disarranged the season's program and led to an unbalanced and unwise expenditure of the available funds prior to the reduction, and states, 'The result of these conditions is that, while on the whole the funds paid and appropriated for maintenance of way and structures to January 1, 1920, would be sufficient to maintain the property, it will not maintain it between the date of his report and the close of the year in safety for the operation of trains at usual speed.'

"He then sets up a recommendation that an amount of \$415,500 be added to the appropriation for the maintenance of this property in order to maintain it in safety, but suggests it should be done with the approval and at the expense of the corporation. In the interest of the public and the employees of the company, I suggested this additional amount be expended, and the question of charge to the corporation, or the payment of it by the administration, be left for future determination. This was declined by the administration.

"After repeated wrecks, in which employees were killed and maimed, directly traceable to inadequate inspection and maintenance, I repeated this suggestion and it was accepted; but not until the period in which maintenance work on railroads should be accomplished was almost past. To be specific, the authority given by the Washington administration to its local managers was issued September 11; and as late as the last week in September, during which I made an inspection of the property, the additional forces had not yet been fully inaugurated.

"Accompanied by J. W. Kendrick and four other experienced officers in railway construction and maintenance, including the chief engineer and the engineer maintenance of way of this property for the Railroad Administration, I made a very minute and accurate inspection of more than 900 miles of the main line of this property during the last week of September, 1919.

"We found conditions of track absolutely unbelievable as to deterioration, resulting from neglect and inadequate maintenance; and more than 100 places at which the track was positively unsafe for operation of trains.

"The director-general states that the St. Louis-Southwestern road was in exceedingly poor condition at December 31, 1917. This statement is positively and wholly untrue. I have a condition record of the property at that date, from personal knowledge and inspection, accompanied by officers of the company.

"The truth is the Railroad Administration has not gotten and is not now getting more than a very small percentage of benefit in maintenance and construction in comparison with the amount of money it is expending. This is clearly evident in the plans and methods it is preparing to pursue in the expenditure of additional appropriation of funds upon this property at this late season."

With regard to Mr. Hines' reference to President Herbert's instructions regarding maintenance under federal control, Mr. Herbert makes the following statement:

"Much importance has been attached to my letter of January 5, 1918, addressed to General Manager Neff. In August, 1916, this company inaugurated a policy of maintenance which had for its object the expenditure of such amounts for maintenance and for additions and betterments as would enable it to be operated efficiently and economically. My letter of January 5, 1918, to General Manager Neff was simply to inform a comparatively new general manager of our policy in these matters. On February 24, 1917, a similar letter was written to W. T. Tyler, who had just before come to the property as general manager, and on June 4, 1917, I again wrote Mr. Tyler urging that the work of improving the standard of maintenance be given his attention. When James Russell came to this property as general manager, I wrote him on September 22, 1917, that the work of carrying out the bridge and building program for the calendar year 1917 be urged to completion. These letters, I believe, demonstrate clearly that there was no change in the maintenance policy of this company after the beginning of the period of federal control."

Findings of the Texas Commission

That the Cotton Belt Lines in Texas were not in a safe condition was the conclusion of the Texas Commission based on a report of its chief inspector, R. D. Parker. This is indicated by a letter addressed to the director general on October 22 and signed by Earle B. Mayfield and Clarence E. Gilmore, members of the commission, but not by Allison Mayfield, the chairman. The letter is abstracted below:

"This report is now before the commission and for your information a copy is being sent you herewith. From this report, we conclude that the lines of the Cotton Belt in Texas, east of the ninety-sixth meridian, are unsafe for normal operation, and in some districts, in part, are at the point of danger. This includes the major portion of the mileage of the St. Louis-Southwestern Railway Company in Texas, not including subsidiary lines.

"Briefly, the defections in track are attributed to broken, rotten or otherwise defective ties, as many as 10 to a rail length, 6 of which, laid consecutively, were found in main-line tracks; to deplorable conditions found at rail joints where ties were misplaced, joint churning on account of defective drainage, insecure spiking, poor or no adjustment of expansion between rail ends and loose and missing bolts; to broken angle bars; to defective drainage of track as a whole; to defective rail, and to otherwise neglected maintenance.

"It is believed that the Railway Administration, regardless of its obligation to the corporation, does not lend its approval to a situation which involves the safety of any railway property when its knowledge embraces actual conditions. While this report is at variance with information that has been given you, as indicated in your letter of October 7, we are disposed to rely upon the data contained in this report as being authentic and from an unbiased source."

Arkansas Commission Also Investigates

An inspection was made of the Cotton Belt lines in Arkansas under the auspices of the Arkansas Corporation Commission between October 20 and November 1, the inspection party consisting of Commissioners R. H. Wilson, Walter G. Brasher and T. E. Wood; L. W. Helmreich, engineer of the commission; W. H. Vance, engineer maintenance of way under the federal manager; and J. S. Berry. Other officers of the corporation and the Railroad Administration accompanied the party on various portions of the trip.

The opinion of the commission, as based on the inspection

and the report of its chief engineer, is given in the following copy of a letter to Federal Manager Neff, dated November 26, signed by the three members of the commission, accompanying the report of the commission's engineer:

"The examination and inspection was made pursuant to complaint 'That the tracks in Arkansas had reached a point through failure and neglect of maintenance by the Railroad Administration of unsafe condition for normal operation as evidenced by derailments, killing and injuring employees and others.' The report speaks for itself and it is apparent that maintenance work should be vigorously prosecuted with a view to improving conditions.

"The commission does not deem the tracks unsafe for the trains as operated, but our investigation developed that schedules are not being maintained at all times by reason of slow orders. It is proper that speed should be sacrificed for safety of operation, but it is the opinion of the commission that track defects, as noted in the report, should be given very prompt attention so as to eliminate all causes of delay from this source.

"The commission would not undertake to say that the present condition of the track is due to failure and neglect of maintenance by the Railroad Administration. It seems to be rather the result of financial differences, economic and labor disturbances and unusual weather conditions.

"In an effort to arrive at a just conclusion as to the hazard of the tracks, reflected by passengers and employees killed and injured, the commission called for a statement covering a period of the last six months of 1917 and for the period from April 1 to October 16 of the present year. The report for the present year shows that no passengers or employees had been killed and there were no passengers injured and but three employees. The report for 1917 is not so good. It is nothing but just that we should say that train schedules are being maintained as well and better at the present time than for the latter period of 1917. This conclusion is formed from reports of train operation."

Another source of information concerning the condition of the Cotton Belt is obtained from the report of an inspection made by two representatives of the Interstate Commerce Commission in connection with a derailment. These men covered a considerable mileage on a motor car, and the following is an extract from a report made on October 27, 1919:

"After completing the investigation of the accident, a general investigation was made of track conditions, covering 503 miles of the more important part of the system. These examinations showed many broken ties, loose or missing spikes, and surface-bent rails. Lack of proper ballast was prevalent, and in territory where natural soil was used as ballast, comprising about 40 per cent of the total examined, the track was center-bound in many places and as a result there were many broken ties. Most of this natural-soil ballast consisted of heavy sand. On tangent track the rails were usually laid with even joints, and the operation of heavy power over these even joints, coupled with the general deficiency in ballast, has tended to create irregularities at joints. The records of the various subdivisions inspected showed that the tie renewals authorized for the year 1919 varied from 10 to 15 per cent of the total ties in the track, and that the renewals completed up to August 31 varied from 38 to 66 per cent of those authorized, leaving in the track from 3.37 to 7.7 per cent of the total still to be renewed by the end of the year. Taken as a whole, the drainage was fair and the gage good, the principal trouble being lack of adequate ballast and a general need of resurfacing."

Inspection by James Russell, General Manager of the Denver & Rio Grande

Acting upon instructions from W. T. Tyler, director of the Division of Operation, an inspection of the St. Louis-Southwestern System was made by James Russell, general manager of the Denver & Rio Grande, covering the same territory and making the same stops as were made by the officers of the two state commissions, Mr. Russell having been general manager of the Cotton Belt from September 1, 1917, to November 1, 1917, just prior to the advent of government control. After he received the report which Mr. Russell pre-

pared on his inspection, B. F. Bush, director of the Southwestern region, addressed a letter to the Texas Commission, under date of November 19, taking exception to the findings of the commission's engineer. Excerpts from this letter appear below:

"Inspection of this railroad by representatives of the Railroad Administration, making the same stops and walking over the same track on which report was made by your engineer, and where the track has not been reworked since the date of his report, discloses statements which are either deliberate misrepresentations of facts or show an entire lack of knowledge on the part of your engineer as to what constitutes a serviceable railroad crosstie and also as to what physical conditions constitute unsafe track.

"Throughout the entire report, some conditions, which may be undesirable, have been enlarged upon and made to appear in as bad light as possible, for many of which the Railroad Administration is in no way responsible.

"As to the general tie condition between Texarkana and Mt. Pleasant where particular attention is called to 'unsafe conditions' by your engineer, the track is well tied and nothing like the number of alleged defective ties are in the track structure. In many places the track is 'center-bound,' but this is the result of an accumulation of past years and one which the Railroad Administration representatives have been endeavoring to correct but which could not all be accomplished during the period of federal control and the condition has been aggravated by the excessive rainfall of the past few months.

"The recommendation of your engineer that at least eight inches of gravel be placed under the ties in this territory is doubtless desirable, but the application of this ballast is the direct obligation of the corporation, the cost of which they have been, and are now, unable to assume; therefore, the work has not been undertaken as it is not the obligation of the Railroad Administration. The same statement applies to the laying of new rail in this territory, the betterment charges in connection with which are the obligation of the corporation, and which they are unable to assume, and such new rail should not be laid in advance of application of additional ballast to this line.

"Between Tyler and Lufkin, at a point near mile post E-553, where your engineer reports from three to eight ties to the panel broken or otherwise failed, an inspection of the track covering a distance of seven telegraph poles from mile post E-553 south, discloses that the track is well tied, only two decayed and one broken tie in a wide spread having reached the removal stage. In this territory, there were several ties which had recently been removed from track that had from one to three years safe service life, and they have been ordered reinstated in track.

"Statement is made on page 52 that 'Long stretch of track through bottoms west of Athens built practically on original ground surface and not well drained on mile 587 and part of mile 588. Condition of this track unsafe due to the condition.'

"It is a fact that the road bed is built practically on a level with the surrounding country and is ballasted with the immediately adjoining native material, and, under such moisture conditions as have recently obtained, the only way to correct this condition is to raise the track bed from three to four feet above the natural surface and ballast with a good quality of material. As now constructed, and for which the Railroad Administration is in no way responsible, it is an impossibility to have good track through this location until the road bed dries out, or the track is raised, the cost of which raising would be an obligation of the corporation.

"The Administration officers in charge of the maintenance of this railroad are taking proper steps to continue to keep the track in safe condition for operation at train speeds permitted. Taken as a whole, the report of your engineer clearly indicates to me a strong tendency to exaggerate minor defects to place the entire situation in as bad light as possible either by deliberate intent or lack of knowledge of what constitutes safe track under proper control of train movements, and I believe that your commission should give further consideration to this report to assure yourselves of whether or not it represents a true statement of facts."

This letter led to the making of a second inspection under

the auspices of the Texas commission on December 5, 6 and 8. Earle B. Mayfield and R. D. Parker, a member of the commission and engineer, respectively, covered portions of the line in company with representatives of the Railroad Administration and the corporate interests of the road and S. H. Cox and H. J. Graeser, citizens of Tyler, Tex., of previous railroad or engineer experience. Mr. Bush objected to what he considered the superficial character of this second inspection, calling attention to the fact that the federal officers of the railroad had no voice in the selection of the ostensibly disinterested men accompanying the party, and wrote the commission on December 16 objecting to the basing of any judgment relative to the condition of the track of the St. Louis Southwestern Railroad of Texas on such an incomplete inspection. The reply of Commissioners Earle B. Mayfield and Clarence Gilmore appears in part below:

"It is a matter of very great regret that you saw proper in your letter of November 19 to call in question both the integrity and ability of the chief engineer of the railroad commission, Mr. R. D. Parker. Mr. Parker's long service with the commission has established so firmly both his integrity as a man and his ability as an engineer that neither of these need any defence whatever. The reinspection made by Commissioner Earle B. Mayfield was merely for the purpose of checking the situation to be sure that Mr. Parker had not fallen into error in some way, and that only by reason of your high position and your challenge of the report. Sufficient reinspection was made to fully satisfy the commission of the correctness of Mr. Parker's original report.

"The members of the commission have no bias in favor of or prejudice against either side of the controversy, nor does the Railroad Commission or its members pretend to say or have any knowledge whatever of the condition of the St. Louis-Southwestern Railway at the time it was taken over by the Government; our only purpose being to ascertain its present condition after we had been advised by the president of the corporation that the road was unsafe for public use.

"This being the situation so far as the commission is concerned, we suggest that further academic discussion of the matter would be useless and this closes our part of the controversy."

This letter was accompanied by a report of the inspection, and with regard to the conditions at Mile E-553 referred to in Mr. Bush's letter the following statement is made:

"The undisputable evidence submitted is conclusive beyond doubt that the defective tie situation at this point reported by Mr. Parker, as a result of his inspection of October 7, 1919,

MAINTENANCE STATISTICS—QUANTITIES PER MILE OF ALL TRACKS			
Year	Rails laid tons of new rail charged to operation	Ties placed in track	Net ton miles per mile of all tracks
Fiscal years	1908	0.33	479
	1909	0.97	645
	1910	0.81	566
	1911	0.52	367
	1912	0.42	325
	1913	1.50	418
Test period	1914	0.13	295
	Average	0.67	435
	1915	0.21	307
	1916	0.45	289
	1917	0.34	279
	Average	0.33	292
Calendar year ...	1917	1.37	251
	1918	1.57	263
	1919 to Sept. 1	1.73	150
	1919 to Dec. 31	1.73	279
			575,103

was true, verifies his findings of fact upon which he based his conclusions, and shows that repairs had been made and track conditions altered and corrected November 4 or 5, 1919, which was some eight or nine days prior to Mr. Russell's inspection. In his inspection of this point, Mr. Bush's inspector, Mr. Russell, reported the track well tied with only two decayed and one broken tie. Therefore, it will be seen that from the evidence above submitted, Mr. Bush's inspector made an erroneous report of defective ties still in the track following the renewals and repairs above referred to."

Maintenance Statistics

With a view to supplying further light on the physical condition of the St. Louis-Southwestern, we give herewith a table of quantities of rails and ties applied in the years 1908 to 1919, inclusive, this data being supplied by the office of the regional director of the Southwestern region.

President Herbert of the Cotton Belt deprecates the value of these figures, stating that "the obligation of the director general cannot be measured by statistics showing quantities

of one or two items applied to the track. Obviously statistics do not reflect conditions brought about by material mis-applied, nor work performed at an inopportune time, and therefore wasted." He also calls attention to the fact that these figures are on a basis of the operated mileage of the Cotton Belt rather than the owned mileage to which the quantities were applied and that the quantities per mile are, therefore, smaller than they should be, although comparisons between federal and private control are on the same basis.

Pennsylvania System Organized Into Four Regions

Vice-Presidents in Charge of Each Region With Broad Local Powers and Complete Staff

THE PENNSYLVANIA SYSTEM has been reorganized for operating purposes after March 1 with the following objects in view: (a) serving the public better; (b) increasing the efficiency of operation, and especially of doing away with the congestion which for many years has made the Pittsburgh gateway a source of expense and delay; and (c) decreasing the cost of operation and increasing the capacity of the plant without additional capital expenditures. The first of these purposes will be accomplished by the decentralization of authority, the second through the decentralization of authority combined with co-operation under the supervision of system officers, and the final object will automatically follow the accomplishment of the first two.

System officers have been grouped under an executive department having attached thereto a transportation department, a traffic department, a financial department, an accounting department, a purchasing department, a real estate department, a legal department, an insurance department, an employees' saving fund department, and a relief and pension department. Samuel Rea will, of course, be president, and reporting directly to him there will be a vice-president in charge of operation, W. W. Atterbury; a vice-president in charge of traffic, George W. Dixon; a vice-president in charge of accounting, A. J. County, a vice-president in charge of real estate, purchases and insurance, M. C. Kennedy; a vice-president in charge of corporate work at Pittsburgh, James J. Turner. There will be two secretaries, one at Philadelphia, Lewis Neilson, and one at Pittsburgh, S. H. Church. In addition, there will be a vice-president in charge of personnel, G. L. Peck, who will report to General Atterbury.

The combined lines east and west of Pittsburgh have been divided into four sections: The eastern, from New York to Altoona, Pa., and Washington, D. C.; the central, from Altoona to Buffalo, N. Y., Columbus, Ohio, and Mansfield; the northwestern, from Columbus and Mansfield to Chicago; and the southwestern, from Columbus and Cincinnati to St. Louis, Mo. Each of these will be in charge of a regional vice-president. The four regional vice-presidents are Elisha Lee at Philadelphia, R. L. O'Donnell at Pittsburgh, J. G. Rodgers at Chicago, and Benjamin McKeen at St. Louis.

Each regional vice-president will have on his staff a general manager, a general superintendent of transportation, a chief engineer of maintenance of way, a general superintendent of motive power, general superintendents, a traffic manager, a purchasing agent, a real estate agent, and an accountant. On the eastern and central regions there are assistants to the general manager, general superintendents of transportation, etc., commensurate with the amount of business to be handled by the region.*

The transportation department, headed by General At-

terbury, will consist of a chief of transportation, C. M. Sheaffer, at Philadelphia, with assistants; a chief of motive power, J. T. Wallis, at Philadelphia; a chief mechanical engineer, A. W. Gibbs, at Philadelphia; an engineer of transportation, E. W. Smith, at Philadelphia, and a chief engineer, A. C. Shand, at Philadelphia, with a considerable staff of assistants. It will be remembered that G. L. Peck, in charge of personnel, also reports to General Atterbury.

If there were some other word than "vice" to modify "president" it would possibly be more appropriate as descriptive of the duties of the four men in charge of the regions. Their duties are really analogous to that of president in so far as the operation, maintenance and traffic relations of their territory are concerned. On the other hand it must be borne in mind that the complicated corporation structure of the Pennsylvania with the parent company, the Pennsylvania Railroad and its subsidiary and sub-subsidiary companies, is kept intact; the security holders of each company are fully protected by a corporate organization. This, of course, is explanation enough of why the title of "president" should not be given to the men in charge of the regions. The organization described in this article is an operating and traffic organization chiefly. There will be accounting officers in each region but corporate rights and relations are neither merged or disturbed.

The Pennsylvania System—about 12,000 miles of railroad—has for fifty years been divided at Pittsburgh. One general policy governed the development of the entire system, but from an operating and traffic standpoint the lines east were distinct from the lines west. There was a healthy rivalry between the two organizations and considerable differences in methods not affecting broad general questions of policy.

Pittsburgh was the center, geographically, of the system, and into this center poured traffic from Chicago and the Great Lakes, St. Louis and the Southwest, from the South and Southeast and the East. There was the problem of getting traffic into and out of Pittsburgh. There was also the problem of getting traffic through Pittsburgh. In many ways the division between lines east and west at Pittsburgh was admirable in getting traffic into or out of that gateway. The rub came in getting it through the gateway. Furthermore, the Pennsylvania organization built up during a period of a number of years, and formulated on military lines, tended more and more to become centralized. An attempt was made to offset this tendency by the appointment of resident vice-presidents at Detroit, Chicago, and St. Louis, but these were additions to the system rather than a reorganization of it.

For fifty years prior to the present reorganization the Pennsylvania has spent money for additions and betterments with an eye far to the future. Notwithstanding these expenditures traffic has outgrown facilities. In every period of unusually heavy traffic for the last twenty years the Pennsylvania has been hard pushed. In the unprecedented traffic

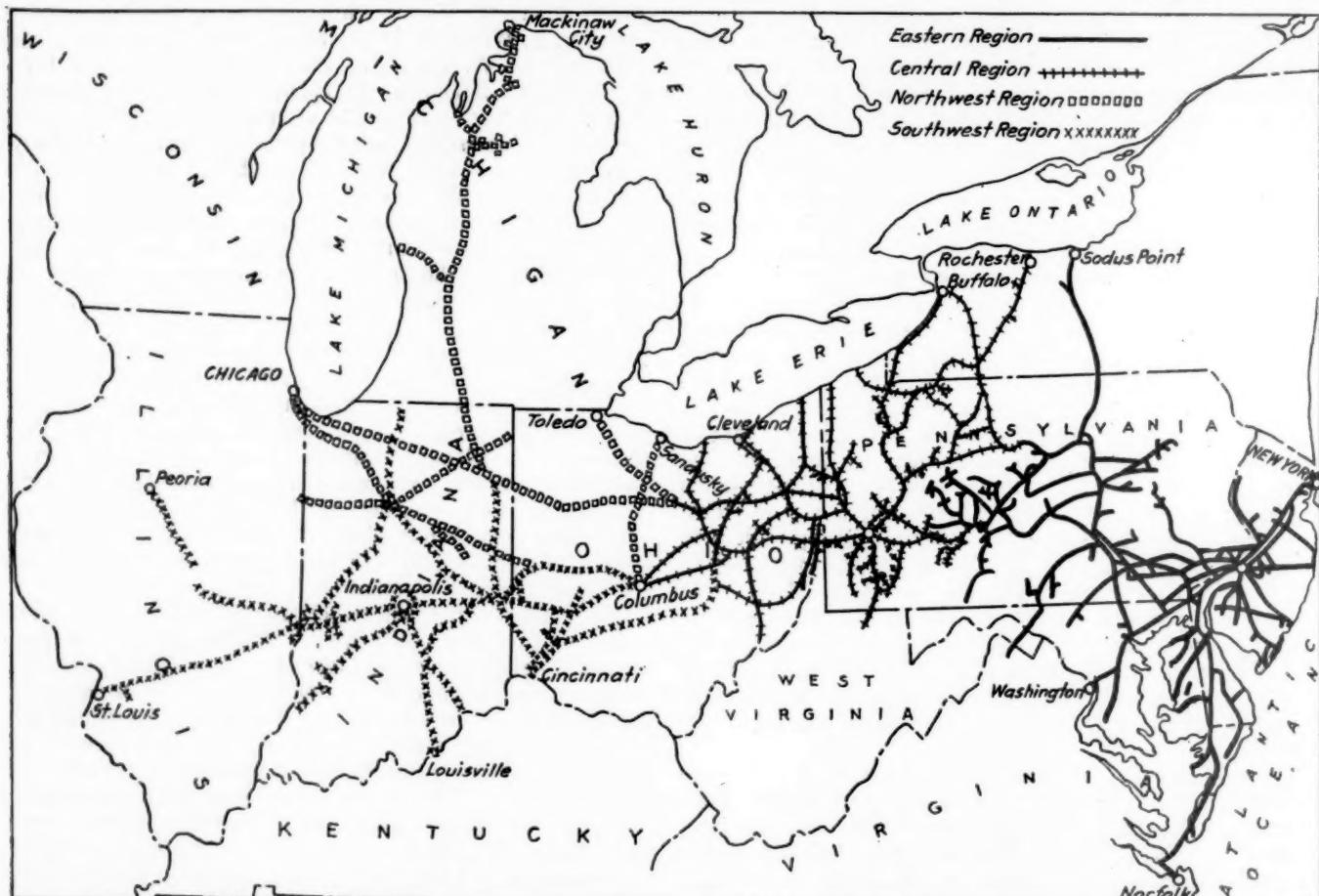
*The names of the regional and other officers will be found in the personal columns of this issue of the *Railway Age*.

beginning with the manufacture of war supplies for the Allies in 1915 the facilities of the Pennsylvania were strained to the breaking point. To add materially to the physical facilities of the main line from Pittsburgh to Philadelphia and New York would require the expenditure of many hundreds of millions of dollars, with no immediate prospect of additional revenue from which to pay additional fixed charges. During the past four years terminal facilities especially have been inadequate. The question now presents itself as to whether a part of this congestion can be eliminated through a more nearly one hundred per cent use of physical facilities by a perfection of personnel and organization. Pennsylvania officers realized as fully as shippers did that centralization had tended to develop a routine through which matters had to pass before they could be finally acted upon, which entailed long delays.

A vice-president in charge of the central district, with adequate authority and staff, should solve the problem of getting traffic through Pittsburgh. Vice-presidents at each of the three principal termini of the system should go far toward

ordinating the work of these officers in regard to both operation and maintenance. His supervision will therefore be more comprehensive than a mere setting of system standards. This is true also of the executive vice-presidents in charge of traffic, finance, accounting and purchases. While the regional vice-presidents have on their staff traffic and purchasing officers they can also avail themselves of the vice-presidents at Philadelphia as consulting experts.

The traffic officer, the accounting officer and the purchasing officer of each region will report to his regional vice-president, and will also consult with and report to the vice-president in charge of his department at Philadelphia. Thus the divisional form of organization which has been the keystone of the Pennsylvania system will be preserved, but co-ordination will be achieved through a staff at Philadelphia. In regard to purchases, for instance, the regional purchasing officer can use his local position and knowledge to get the most advantageous arrangement possible for his company, but, on the other hand, where purchases made in one region can be distributed to other regions with advantage the vice-



The Pennsylvania System Showing the Four Operating Regions Into Which the System is Divided

eliminating the delays heretofore caused by excessive centralization.

The relations between the central organization and the regional organizations is particularly interesting and constitutes an entirely new departure for the Pennsylvania, although some features of it were inherent in the Harriman system of roads, as this system was being developed at the time of E. H. Harriman's death. It will be remembered that Mr. Harriman had a director of operation for the entire Harriman system. W. W. Atterbury, with the title of vice-president in charge of operation, might well have been designated director of operation. While each regional vice-president is responsible for traffic, maintenance and operation in his territory, General Atterbury's duties consist of co-

ordinating the work of these officers in regard to both operation and maintenance.

Separate mention should be made of the Altoona shops, which will be in charge of a works manager, P. F. Smith, Jr., with a shop accountant, an assistant chief of motive power (car), an assistant chief of motive power (locomotive), and a motive power accountant. In other words, the Altoona shops will be organized in much the same way as is an industrial manufacturing plant.

In the same way that the vice-president in charge of purchases will coordinate the powers of the regional purchasing agents, so the vice-president in charge of accounting will coordinate the work of the regional accounting officers. These officers, however, report to the regional vice-president. They are his staff officers.



A Five Car Train on the Manchester-Bury Line

British All-Metal Electric Multiple Unit Cars

Interesting Equipment Built by the Lancashire & Yorkshire
for Its Manchester-Bury Line

By Robert E. Thayer
European Editor of the *Railway Age*

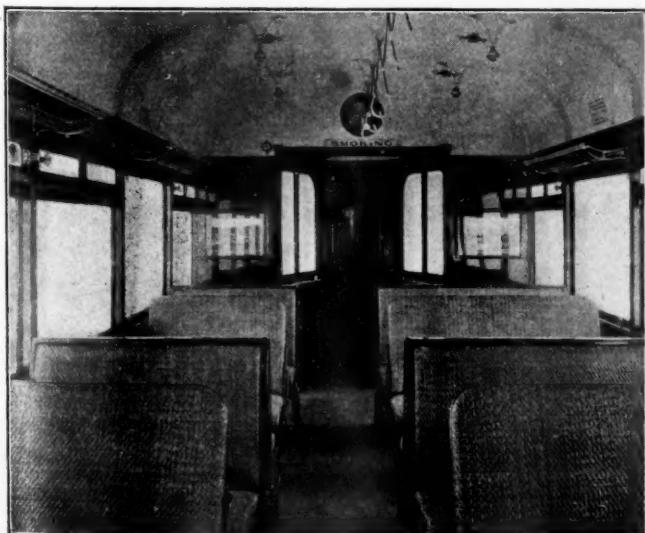
THE LANCASHIRE & YORKSHIRE Railway was the first main line railway in Great Britain to adopt electric traction for its suburban steam service. Its first project was that of converting the Liverpool-Southport line, and later the

line was opened to traffic in March, 1904. The multiple unit system of train control was adopted for this line with two 150 hp. motors on each truck, operating at 600 volts direct current, the power generated being 3-phase, 25 cycles alternating current at 7,500 volts.

This electrification scheme has met with great success. Passenger business has been constantly on the increase ever since the line was put into operation. Whereas there were four lines required in certain parts of this electrified section for steam service, under electric service two lines are sufficient to handle the traffic, although the frequency of trains has been more than doubled. In this way the widening and laying of additional lines through an extensive territory, which would have been required had steam working been retained, has been eliminated.

On the Liverpool-Southport line, which extends to Crossens, there are 14 intermediate stations which lie at an average distance of less than one mile apart on the southern portion and are more widely separated on the northern portion. There were about 36 trains a day in each direction between Liverpool and Southport under steam operation. This number has been increased to 70 under electric operation. The total train mileage per day under steam operation was about 1,900. This has been increased to 3,500. The running time from Liverpool to Southport, which was 54 minutes under steam operation, has been decreased to 37 minutes. The express service between Liverpool and Southport has been increased from four trains per day to ten.

During the first year of the electrification of this line 14 per cent more people were carried, with a reduction of from



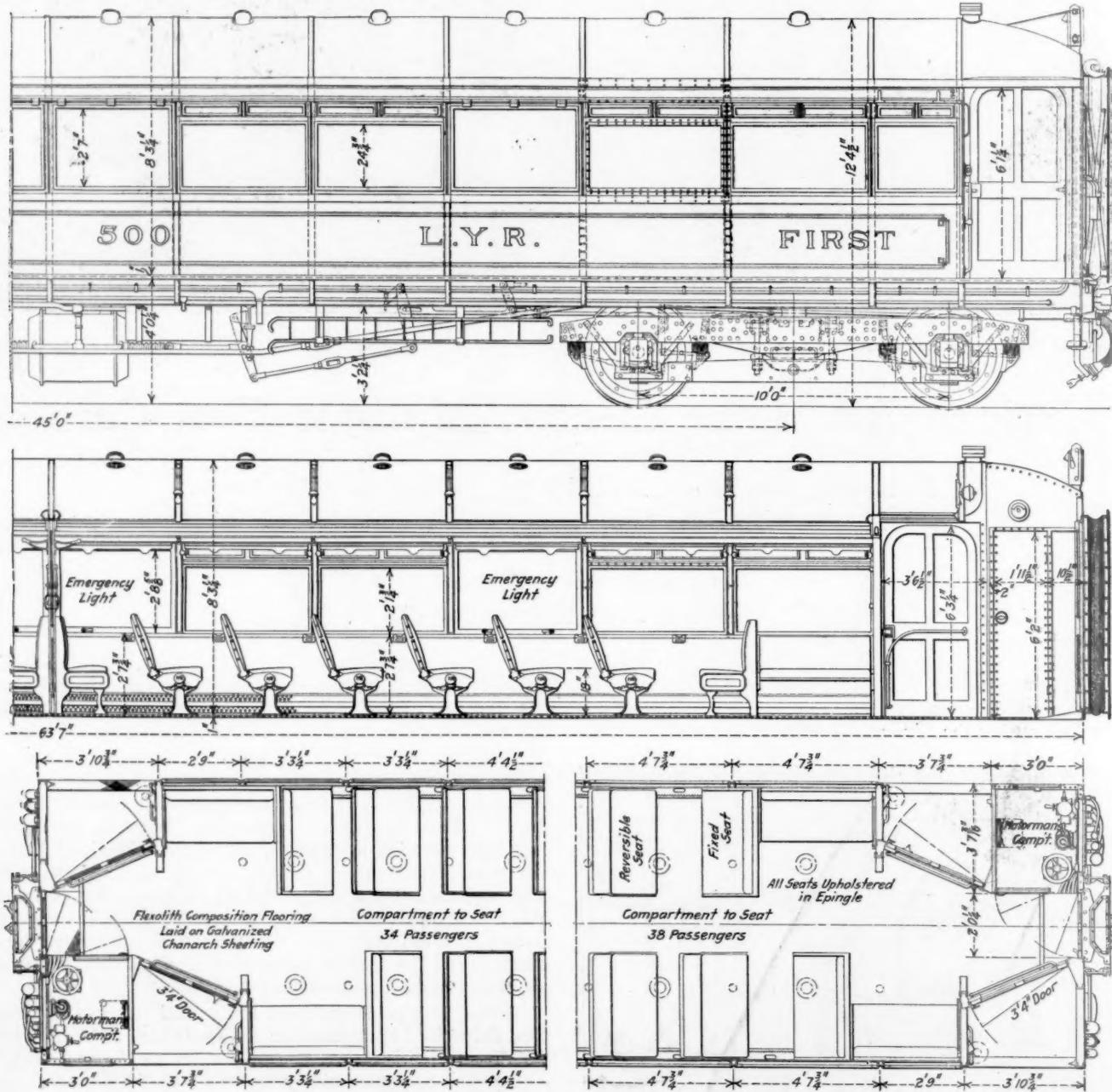
Interior of Third Class Smoking Compartment

line from Sandhills Junction to Ormskirk, the two projects involving 38 miles of track with an equivalent of 80 miles of single track, including sidings. The Liverpool-Southport

78,393 tons to 69,160 tons in the total weight of rolling stock moved per day.

It was the excellent results obtained from this service that lead to the electrification of the Manchester-Bury section of that same road, which was opened for service in February, 1916. This line runs from Manchester via Prestwich to Bury, and from thence to Holcombe Brook, which is $13\frac{1}{4}$ miles from Manchester. The line has rather heavy grades, with several grades over 1 per cent and three of 2 per cent or over. The heaviest grade is 2.4 per cent for a little less than a mile. There are 14 intermediate stations on this line

Southport electrification, a new design of motor car and trailer was developed for this new project. On account of the heavy gradients, and further, to permit of as rapid acceleration as possible due to the large number of stations on the line, a careful study was made to make these cars as light as possible and still retain sufficient strength to meet all service conditions. Whereas the Liverpool-Southport cars are built of wood and metal, the new cars are built entirely of metal, alloy steels and aluminum being used to a considerable extent in an endeavor to keep the weight down. By using aluminum instead of steel plate, the weight of the



Plan and Side Elevations of First Class Trailer Car

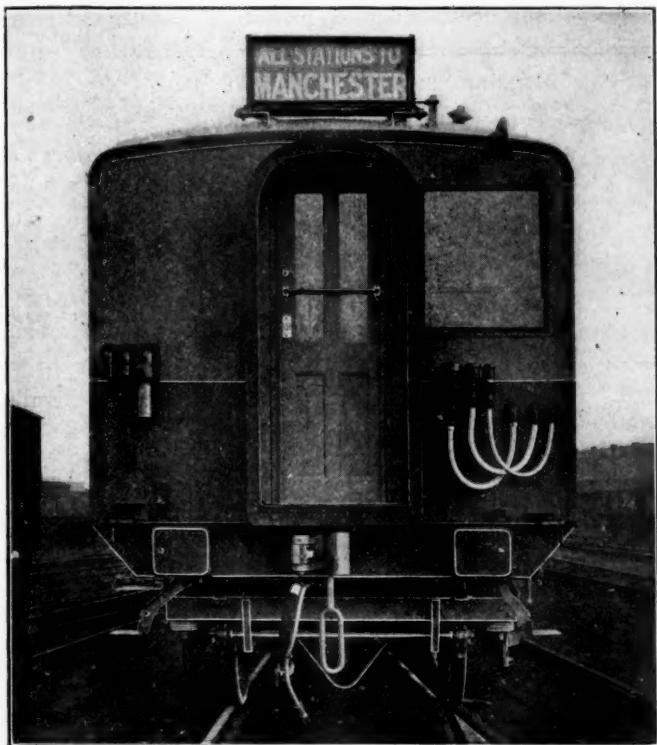
between Manchester and Holcombe Brook. As in the case of the Liverpool-Southport line, this line uses the multiple unit train control system, but the driving current is 1,200 volts direct current instead of 600, and the cars are equipped with four 200 hp. motors, as the grades on the Manchester-Bury line are much heavier than on the Liverpool-Southport line. As in the case of the Liverpool-Southport line, the number of trains on this new line has been greatly increased.

Profiting by the experience obtained on the Lancashire-

cars has been reduced 1,623 lb. These cars are the first all-metal cars to be built for main-line service in Great Britain. Forty-six of them were built three years ago at the railway shops of the Lancashire & Yorkshire with the same force of men that had previously been used in the construction of the wooden cars, and no difficulty was experienced in adapting these men to the new materials involved in the construction of the all-metal cars. These cars are divided into three classes—the motor car, which is always third class

and is provided with a baggage department, and first and third-class trailers.

Contrary to the usual British practice of compartment arrangement, these cars were built with the open aisle similar to American practice and in accordance with the design used on the Liverpool-Southport line. In commenting on



End View of Trailer Car

this arrangement Sir John A. F. Aspinall (general manager of the road at the time the electrification was adopted) stated in his presidential address before the Institution of Mechani-

cal Engineers that with this arrangement the trains can be handled at stations much more quickly than with the compartment coaches having the side doors. "The most crowded cars are always emptied during rush hours in about 50 seconds at terminal stations, while intermediate stops only re-

quire 15 seconds to pick up and set down passengers." He also said, in favor of this arrangement, that greater strength can be obtained with such construction than where the side doors are used, and, in fact, in the design of these cars the side framing has been calculated in as a supporting structure.

Comparison of Car Weights

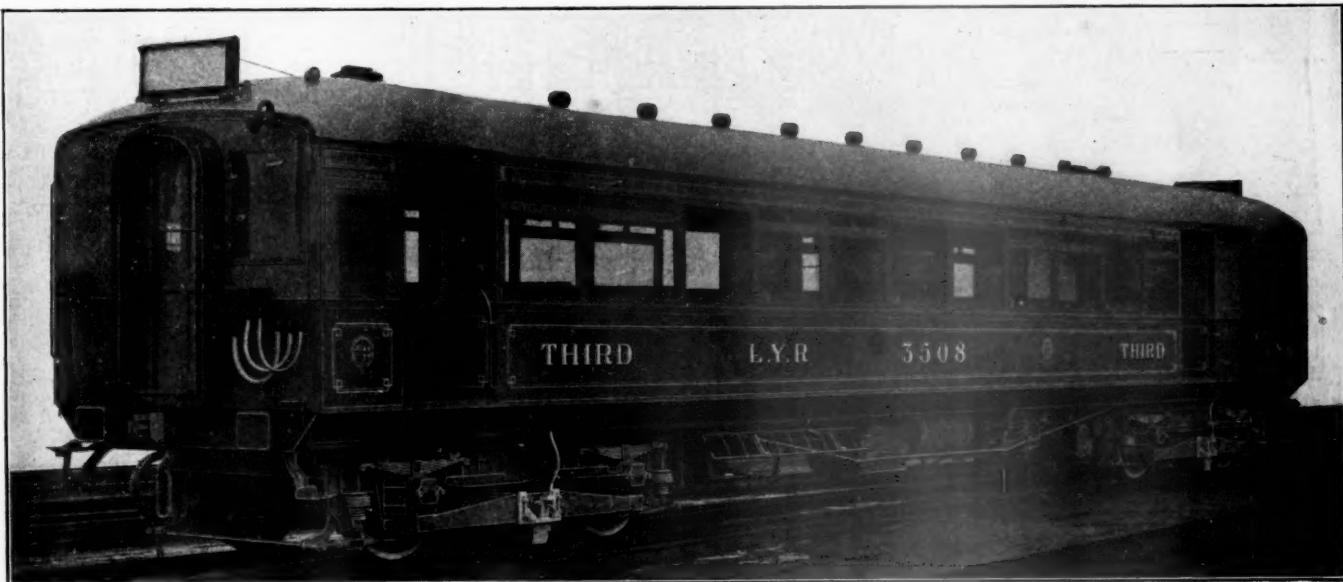
The motor cars weigh unloaded 120,960 lb. These cars carry third-class passengers and have a baggage compart-



Interior of First Class Smoking Compartment

ment. They have a seating capacity for 74 passengers, which gives a total unloaded weight per passenger seat of 1,634 lb. This figure compares with 2,206 lb., the weight per passenger of similar sized motor cars of composite construction.

The third-class trailer cars, which are provided with



Lancashire & Yorkshire Motor Car

men's compartments on each end, but which carry no baggage, have an unloaded weight of 64,960 lb. These have a seating capacity for 95 passengers, which gives an unloaded weight per passenger seat of 683.7 lb. The third-class cars are provided with seating space for five people across the

moto. men's compartments on each end, but which carry no baggage, have an unloaded weight of 64,960 lb. These have a seating capacity for 95 passengers, which gives an unloaded weight per passenger seat of 683.7 lb. The third-class cars are provided with seating space for five people across the

car—that is, three passengers on one large seat on one side of the aisle and two passengers on the other.

In the table is given a comparison of the principal dimensions of the all-metal cars with the composite cars in use on the Liverpool-Southport line and with the all-steel cars in use on the Long Island in the United States. Comparing these trailer cars with those in use on the Long Island Railway, it will be seen that, whereas the Long Island cars are

and practically every inch has been utilized for seating capacity. A study of the floor plans of the motor, the third-class and first-class trailers gives an indication of this. In comparing the all-metal trailer cars with those in use on the Liverpool-Southport line, it is to be mentioned that the latter cars have a motorman's compartment on one end only and that the Manchester-Bury all-metal trailer cars have underframes of sufficient strength to permit of motor trucks being

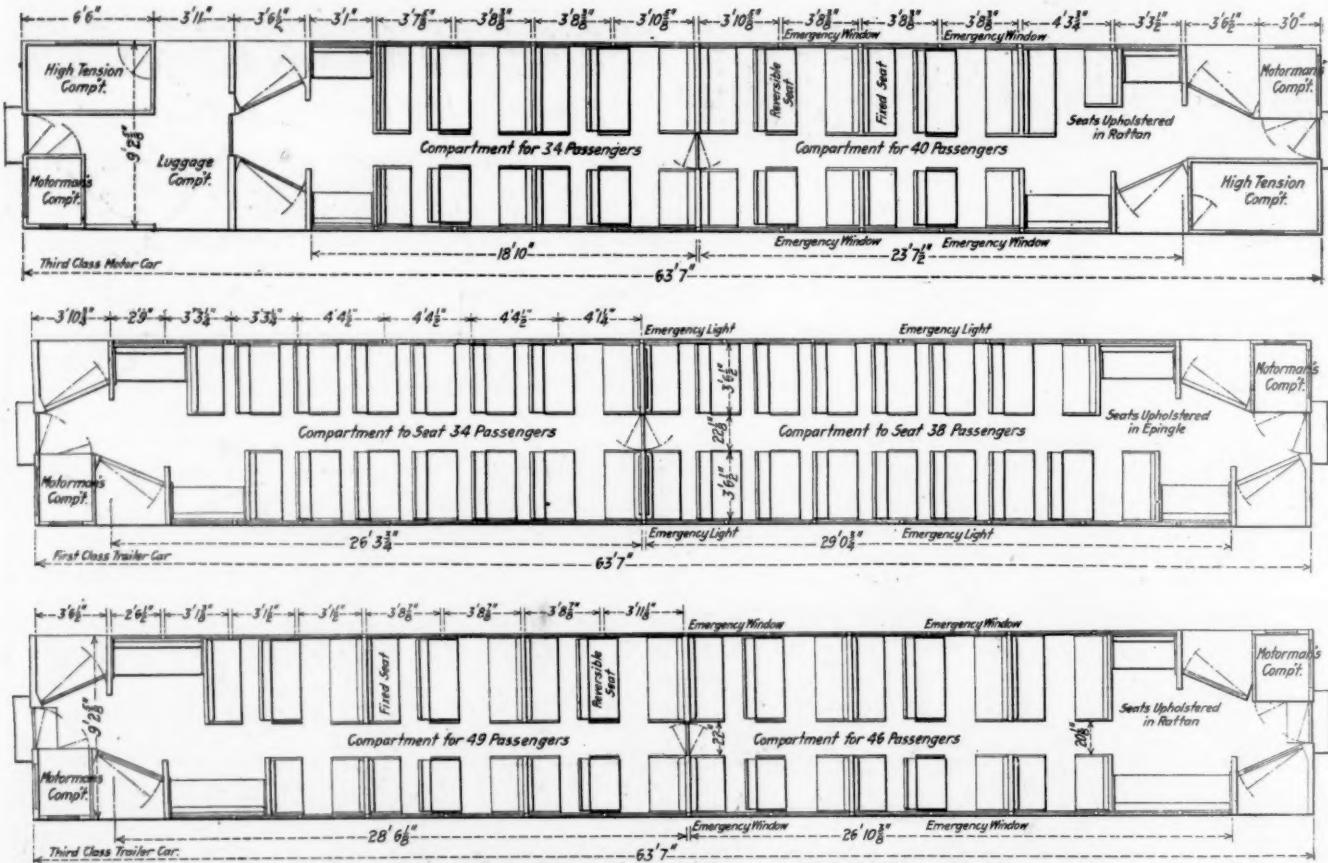
COMPARATIVE TABLE OF CAR DIMENSIONS

	Bury M. U. C.	Liverpool- Southport M. U. C.	Long Island Trailer	Manchester- Bury Trailer	Liverpool- Southport Trailer
Length over all.....	63 ft. 7 in.	60 ft.	62 ft. 9 1/4 in.	63 ft. 7 in.	63 ft. 7 in.
Width of body.....	9 ft. 4 in.	10 ft.	9 ft. 9 1/4 in.	9 ft. 4 in.	10 ft.
Height of car inside, floor to roof.....	8 ft. 3 1/2 in.	8 ft. 0 1/2 in.	.....	8 ft. 3 1/4 in.	8 ft. 3 1/4 in.
Height from rail to top of floor.....	4 ft. 1 1/4 in.	4 ft. 4 1/4 in.	4 ft. 4 1/4 in.	4 ft. 1 1/4 in.	4 ft. 4 1/4 in.
Height from rail to top of roof.....	12 ft. 4 1/2 in.	12 ft. 7 1/2 in.	13 ft.	12 ft. 4 1/2 in.	12 ft. 7 1/2 in.
Center of trucks.....	45 ft.	40 ft. 6 in.	39 ft. 9 in.	45 ft.	45 ft.
Wheelbase of trucks.....	9 ft.	8 ft.	6 ft. 4 in.	10 ft.	10 ft.
Type of roof.....	Clerestory	Clerestory	.....	Elliptical	Elliptical
Number of passenger seats.....	74	68	80	95	97
Weight of two trucks complete.....	62,719 lb.	53,150 lb.	18,000 lb.	22,456 lb.	22,456 lb.
Weight of car unloaded.....	120,960 lb.	11,420 lb.	63,000 lb.	64,960 lb.	61,768 lb.
Weight per seat.....	1,634 lb.	1,680 lb.	887 lb.	683.7 lb.	636.7 lb.

practically the same length, they have a width inside the body of 9 ft. 4 1/2 in. as compared with 8 ft. 11 1/2 in. on the Lancashire & Yorkshire, and they have a seating capacity for 80 passengers as compared with 95 on the Lancashire & Yorkshire cars. The Long Island cars weight 63,100 lb. or 1,860 lb. less than the Lancashire & Yorkville cars, but on account of the seating capacity, due to the fact that the

used. In addition, more brake work is included on the all-metal cars. It has been calculated that these features account for 2,512 lb. of the total weight, which should be deducted when making a comparison. This would make the weight per passenger seat 643.7 lb. for the all-metal car, instead of 683 lb. as shown.

The make-up of the standard train which operates on the



Floor Plans of the Motor Car and First and Third Class Trailers

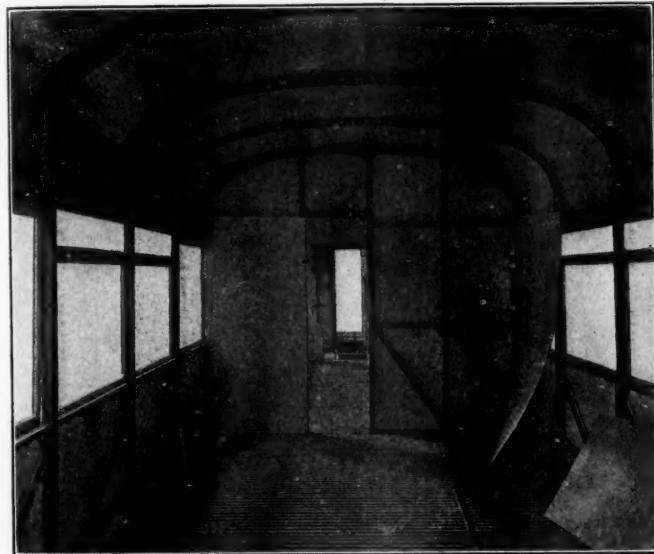
seats provide for only two passengers, the weight of the car per seat is higher, being 788 lb. as against 683.7 lb. for the Lancashire & Yorkshire. The width of the aisle in the third-class coaches with the three-passenger and two-passenger seats is 1 ft. 8 1/8 in., and while that appears to be rather narrow, no great difficulty is experienced in passing down the car. Furthermore, the interior arrangement has been carefully studied

multiple unit control system consists of five cars, the leading, center and rear cars being third-class motor cars and the intermediate vehicles first and third-class trailer cars.

Underframes

The underframe for the three types of cars, that is, the motor, the first and third-class cars, are substantially the

same, having a length over end sills of 36 ft. 7 in. The side sills are made up of 3½-in. by 10-in. by 3/8-in. channels. The side sills, however, are further reinforced at the ends by a ½-in. plate riveted to the side sill, which extends 17 ft. 5 5/8 in. back of the end sill. The crossbearers are 3-in. by 8-in. alloy steel angles, and the intermediate floor sills are 3-in. by 6-in. by 3/8-in. angles. These are set flush with the top of the side sills and support the "Chanarch" flooring. The side sills are reinforced by 1½-in. truss rods which bear on 5-in. by 8-in. I-beams, located 5 ft. either side of the center of the car. The end sills are 10-in. by 3½-in. channels. The body bolsters are built up of four 3½-in. by 8-in. angles, with ½-in. side plates and cover plates. They are attached to the side sills by steel press-



Interior View of Motor Car During Construction

ings, and are further reinforced by pressed steel gusset plates. The draft gear is anchored in a 9-in. by 4-in. I-beam extending across the car between the side sills and located about 2 ft. 6 in. back of the end sills. This end construction is further strengthened by four intermediate angles extending between the end sills and the I-beam, two of which are 3-in. by 3-in. and the other two 3-in. by 8-in. by 3/8-in. alloy steel angles. All of these angles have a side plate of ½-in. material.

The intermediate sills and crossbearers on the motor car are cut short just over the trucks in order to provide proper space for the motors.

The underframe for the first and third-class trailer cars are practically the same and are only different from the underframe of the motor car in that they have an additional intermediate sill made up of a 2-in. by 3-in. by ¼-in. angles. They are also further strengthened over the trucks by cover plate strips and by two intermediate sills made up of 4-in. by 2½-in. by 5/16-in. angles.

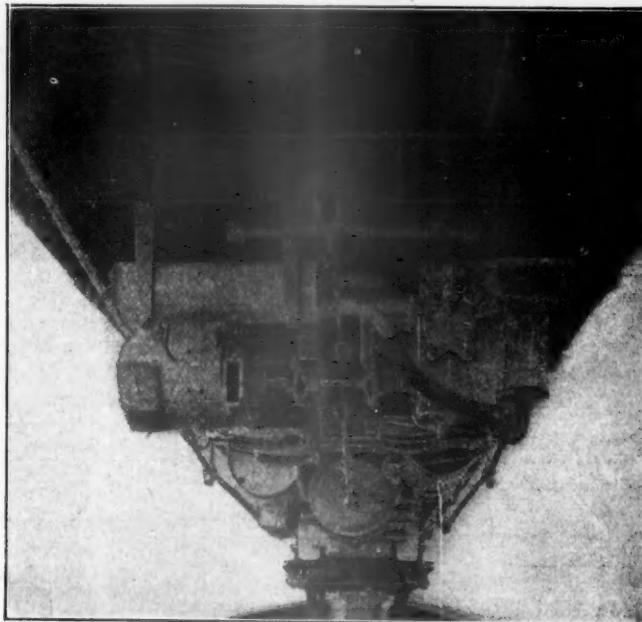
Superstructure

The superstructure is designed to carry part of the load and acts as a continuous side girder to the underframe. It is made up of a bottom side 2-in. by 3-in. by 3/8-in. angle, which is riveted to pressed steel bracelets extending out from the side sill of the underframe to which they are riveted. The side posts and carlines extend in one piece from the side sill to the ridge pole. They are 2½-in. by 1¾-in. alloy-steel channels being bent and riveted to the side sill brackets at the bottom and united at the top by a plate riveted to the webs of the channel. They are equally spaced throughout the center of the car on 3-ft. 10 7/8-in. centers. At the ends the spacing is a little closer together. They are braced by a

belt rail of 2-in. by 1¾-in. by ¼-in. angles, located approximately 2 ft. 8 in. above the lower angle; by an upper belt rail of 1¼-in. by 1¼-in. by ¼-in. angle, and a side plate or cant rail of 2-in. by 1½-in. by ¼-in. angle. In addition to this there are diagonal braces of 1¼-in. by 1¼-in. by 3/16-in. angles extending from the juncture of the lower belt rail with the side posts to the 2-in. by 3-in. by 3/8-in. angle bottom side rails.

All the longitudinal rails are connected to the side posts by pressed steel knee plates. In addition to the longitudinal rails there extends along the lower part of the body structure a heater duct rail of 2-in. by 1½-in. tee. There are other longitudinal rails extending between the side posts, which give the structure additional strength. The side and roof plates are of aluminum. The roof sheets are made up of aluminum plates 12 ft. by 4 ft. 6 ¼ in. by No. 14 S. W. G. They are carried in one piece from side to side and are joined to the carlines with 2-in. by 1-in. strips of aluminum, which are well lagged and which are double riveted with ¼-in. aluminum rivets spaced at a 3-in. pitch. In as much as the climate in which these cars are to be run is neither excessively cold nor excessively hot, it was unnecessary to insulate the roof, and as the appearances do not require it no inner roof was used.

The sides of the cars below the windows are sheathed with No. 14 S. W. G. outside aluminum plates and No. 18 S. W. G. inside aluminum plates, with an air space of 1¾ in. between them. The inner sheathing was to improve the appearance of the car and also to serve as insulation. The side window frames are of aluminum and are riveted to the



Equipment Beneath the Car Underframe

side posts and rails with ¼-in. aluminum rivets. The glass is embedded in felt and secured by a wrought iron frame secured to the main window frame.

As will be seen from the drawings showing the seating arrangements, some of the seats of third-class cars are placed back to back. The outside ends of these seats are supported on brackets riveted to the side posts.

Doors

The arrangement of the doors is rather unique. In keeping with the all-metal construction of the car, these doors are of steel, having been furnished by Heywood Bros. & Son, having been arranged to swing outward, which

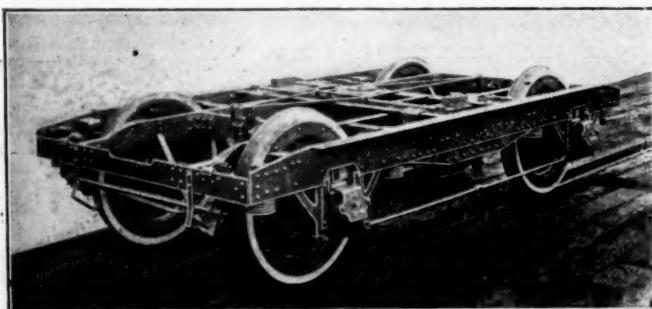
greatly expedites the unloading of the cars. They are fitted with an india-rubber welt in the door check to provide a water-tight joint and to eliminate any metallic sound when the door is closed. They weigh 141 lb. each, as compared to 114 lb. for oak doors.

Trucks

The trucks for the motor and trailer cars are of similar construction, those for the motor cars being built of heavier materials. Both are built up of structural steel, with box girder bolster having a lateral swing of $1\frac{1}{2}$ in. in each direction. Four helical bolster springs are used, and semi-elliptical springs are used over each pedestal. The body framing of the motor truck is made up of 12-in. by 4-in. by $\frac{1}{2}$ -in. angles, being provided with heavy gusset plates at the top. The truck bolsters are made up of 8-in. by 3-in. by $1\frac{1}{2}$ -in. angles.

The trucks for the trailer cars have a body frame made up of 4-in. by 10-in. by $\frac{1}{2}$ -in. side angles and 3-in. by 6-in. by $\frac{1}{2}$ -in. end angles. The truck bolsters are built up of 9-in. by $3\frac{1}{2}$ -in. by $\frac{5}{8}$ -in. bulb angles, with 8-in. by $3\frac{1}{2}$ -in. by $\frac{1}{2}$ -in. angles for the transoms. The side bearers are located 5 ft. 11 $\frac{9}{16}$ in. between centers.

The motor trucks have a wheel base of 9 ft., which gives ample room for the two 200 hp. motors. The trailer trucks have a wheel base of 10 ft. In both cases the diameter of the wheels is 42 in. and the journals are 9 in. by $4\frac{1}{4}$ in. for the trailer trucks and 10 in. by 5 in. for the motor trucks. The driving gears for the motor trucks are pressed on to the



Trailer Car Truck

axle, and in addition are bolted to the truck wheels in order to relieve the axle of severe torsional strains.

A gearing ratio of 2.36 to 1 is provided. The clasp type of brake is used on both trucks. The brake shoe is solid and of sufficient hardness to give a mileage of 8,000 miles.

Maintenance

In a paper before the Institute of Civil Engineers a short time ago both George Hughes, chief mechanical engineer, and F. E. Gobey, assistant carriage and wagon superintendent of the Lancashire & Yorkshire, discussed the question of maintenance of these cars. There have been in service for three years 46 of these all-metal cars. They have averaged 250,000 miles per annum and have operated in temperatures varying between 20 deg. F. and 120 deg. F. There has been no weakening since they were first placed into service in any respect. The flooring composition has had no effect whatever on the floor sheets, but the original $\frac{3}{8}$ -in. thickness upon the top of the sheets is slightly worn in the aisles. It was found that aluminum oxidizes in contact with "Flexolite," and in this case aluminum was replaced with brass.

The removal of the inside panels does not show that any corrosion or sweating has taken place on either body, framing or the inside of the outer panels. The actual car repairs in traffic have been slightly less than for wooden cars during a similar period. The all-metal cars are overhauled every two years, and it is expected that less material and labor will be required on them than for wooden cars. The period-

ical overhauling of this equipment has already been described in an article published in the *Railage Age* issue of September 26, 1919, page 625. The average total number of faults per month for the 12 months ending July 31, 1919, was 72.4 and the faults per thousand motor-car miles was 0.78, of which the control equipment was responsible for 0.4 and the motor, motor trucks, cars and subsidiary equipment was responsible for 0.38, the largest of which was 0.13 for the subsidiary equipment. The reasons for the defects of the control equipment being so high was on account of the automatic control, which very largely increases the number of small parts.

In comparing the performance of the new all-metal cars with the cars of composite construction used on the Liverpool-Southport line, it is found that the faults per 1,000



Rear End of Car, Showing Damage to Door in Collision

motor-car miles was practically the same, being 0.76 on the Liverpool-Southport line as against 0.78 on the Manchester-Bury line. The greatest trouble in the Liverpool-Southport line was given by the motors, which average 0.26 faults per thousand motor-car miles.

The performance of the all-metal cars in collision has been demonstrated by three collisions that have taken place, in which it was found that the damage to the all-metal cars was confined to the ends of the cars. The doorways are the principal buckling points, which, being at the extreme ends of the cars and having vestibules, absorb the blow. The light car structure minimizes the force of impact and the effects of the collision where the metal framing is suitably disposed. There was no difficulty in carrying out the repairs in the car shops. The metal structure absorbs collision shocks in less space than the wooden cars, with the resultant effect that there is less liability of injury to passengers. The effect of collisions on these all-metal cars is shown in the illustration of the rear of a car.

Text of Railroad Bill as Revised by Conferees

Many Important Changes Adopted, Particularly in Rate-Making and Labor Provisions

FOLLOWING is the complete text of the Esch-Cummins railroad bill as revised by the conference committee of the Senate and the House, submitted to the two houses on Wednesday, February 18. It was planned to allow four hours' debate and to pass it in the House on Saturday and to take it up immediately thereafter in the Senate:

An Act

To provide for the termination of Federal control of railroads and systems of transportation; to provide for the settlement of disputes between carriers and their employees; to further amend an Act entitled "An Act to regulate commerce," approved February 4, 1887, as amended, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Title I—Definitions

SECTION 1. This Act may be cited as the "Transportation Act, 1920."

SEC. 2. When used in this Act the term "Interstate Commerce Act" means the Act entitled "An Act to regulate commerce," approved February 4, 1887, as amended;

The term "Commerce Court Act" means the Act entitled "An Act to create a commerce court, and to amend an Act entitled 'An Act to regulate commerce,' approved February 4, 1887, as heretofore amended, and for other purposes," approved June 18, 1910;

The term "Federal Control Act" means the Act entitled "An Act to provide for the operation of transportation systems while under Federal control, for the just compensation of their owners, and for other purposes," approved March 21, 1918, as amended;

The term "Federal control" means the possession, use, control, and operation of railroads and systems of transportation, taken over or assumed by the President under section 1 of the Act entitled "An Act making appropriations for the support of the Army for the fiscal year ending June 30, 1917, and for other purposes," approved August 29, 1916, or under the Federal Control Act; and

The term "Commission" means the Interstate Commerce Commission.

Title II—Termination of Federal Control

SEC. 200. (a) Federal control shall terminate at 12:01 a. m., March 1, 1920; and the President shall then relinquish possession and control of all railroads and systems of transportation then under federal control and cease the use and operation thereof.

(b) Thereafter the President shall not have or exercise any of the powers conferred upon him by the Federal Control Act relating—

(1) To the use or operation of railroads or systems of transportation;

(2) To the control or supervision of the carriers owning or operating them, or of the business or affairs of such carriers;

(3) To their rates, fares, charges, classifications, regulations, or practices;

(4) To the purchase, construction, or other acquisition of boats, barges, tugs, and other transportation facilities on the inland, canal, or coastwise waterways; or (except in pursuance of contracts or agreements entered into before the termination of federal control) of terminals, motive power, cars, or equipment, on or in connection with any railroad or system of transportation;

(5) To the utilization or operation of canals;

Washington, D. C.

(6) To the purchase of securities of carriers, except in pursuance of contracts or agreements entered into before the termination of federal control, or as a necessary or proper incident to the adjustment, settlement, liquidation and winding up of matters arising out of federal control; or

(7) To the use for any of the purposes above stated (except in pursuance of contracts or agreements entered into before the termination of federal control, and except as a necessary or proper incident to the winding up or settling of matters arising out of federal control, and except as provided in section 202) of the revolving fund created by such Act, or of any of the additions thereto made under such Act, or by the Act entitled "An Act to supply a deficiency in the appropriation for carrying out the Act entitled 'An Act to provide for the operation of transportation systems while under federal control, for the just compensation of their owners, and for other purposes,' approved March 21, 1918," approved June 30, 1919.

(c) Nothing in this Act shall be construed as affecting or limiting the power of the President in time of war (under section 1 of the Act entitled "An Act making appropriations for the support of the army for the fiscal year ending June 30, 1917, and for other purposes," approved August 29, 1916) to take possession and assume control of any system of transportation and utilize the same.

Government-Owned Boats on Inland Waterways

SEC. 201. (a) On the termination of federal control, as provided in section 200, all boats, barges, tugs, and other transportation facilities, on the inland, canal, and coastwise waterways (hereinafter in this section called "transportation facilities") acquired by the United States in pursuance of the fourth paragraph of section 6 of the Federal Control Act (except the transportation facilities constituting parts of railroads or transportation systems over which federal control was assumed) are transferred to the secretary of war, who shall operate or cause to be operated such transportation facilities so that the lines of inland water transportation established by or through the President during federal control shall be continued, and assume and carry out all contracts and agreements in relation thereto entered into by or through the President in pursuance of such paragraph prior to the time above fixed for such transfer. All payments under the terms of such contracts, and for claims arising out of the operation of such transportation facilities by or through the President prior to the termination of federal control, shall be made out of moneys available under the provisions of this Act for adjusting, settling, liquidating, and winding up matters arising out of or incident to federal control. Moneys required for such payments shall, from time to time, be transferred to the secretary of war as required for payment under the terms of such contracts.

(b) All other payments after such transfer in connection with the construction, utilization, and operation of any such transportation facilities, whether completed or under construction, shall be made by the secretary of war out of funds now or hereafter made available for that purpose.

(c) The secretary of war is hereby authorized, out of any moneys hereafter made available therefor, to construct or contract for the construction of terminal facilities for the interchange of traffic between the transportation facilities operated by him under this section and other carriers whether by rail or water, and to make loans for such purposes under such terms and conditions as he may determine to any state whose constitution prohibits the ownership of such terminal facilities by other than the state or a political subdivision thereof.

(d) Any transportation facilities owned by the United States and included within any contract made by the United States for operation on the Mississippi river above Saint Louis, the possession of which reverts to the United States at or before the expiration of such contract, shall be operated by the secre-

tary of war so as to provide facilities for water carriage on the Mississippi river above Saint Louis.

(e) The operation of the transportation facilities referred to in this section shall be subject to the provisions of the Interstate Commerce Act as amended by this Act or by subsequent legislation, and to the provisions of the "Shipping Act, 1916," as now or hereafter amended, in the same manner and to the same extent as if such transportation facilities were privately owned and operated; and all such vessels while operated and employed solely as merchant vessels shall be subject to all other laws, regulations, and liabilities governing merchant vessels, whether the United States is interested therein as owner, in whole or in part, or holds any mortgage, lien, or interest therein. For the performance of the duties imposed by this section the secretary of war is authorized to appoint or employ such number of experts, clerks, and other employees as may be necessary for service in the District of Columbia or elsewhere, and as may be provided for by Congress.

Settlement of Matters Arising Out of Federal Control

SEC. 202. The President shall, as soon as practicable after the termination of federal control, adjust, settle, liquidate, and wind up all matters, including compensation, and all questions and disputes of whatsoever nature, arising out of or incident to federal control. For these purposes and for the purpose of making the payments specified in subdivision (a) of section 201, all unexpended balances in the revolving fund created by the Federal Control Act or of the moneys appropriated by the Act entitled "An Act to supply a deficiency in the appropriation for carrying out the Act entitled 'An Act to provide for the operation of transportation systems while under federal control, for the just compensation of their owners, and for other purposes,' approved March 21, 1918," approved June 30, 1919, are hereby reappropriated and made available until expended; and all moneys derived from the operation of the carriers or otherwise arising out of federal control, and all moneys that have been or may be received in payment of the indebtedness of any carrier to the United States arising out of federal control, shall be and remain available until expended for the aforesaid purposes; and there is hereby appropriated for the aforesaid purposes, out of any money in the treasury not otherwise appropriated, \$200,000,000 in addition to the above, to be available until expended.

Compensation of Carriers with Which no Contract Has Been Made

SEC. 203. (a) Upon the request of any carrier entitled to just compensation under the Federal Control Act, but with which no contract fixing or waiving compensation has been made and which has made no waiver of compensation, the President: (1) shall pay to it so much of the amount he may determine to be just compensation as may be necessary to enable such carrier to have the sums required for interest, taxes, and other corporate charges and expenses referred to in paragraph (b) of section 7 of the standard contract between the United States and the carriers, accruing during the period for which such carrier is entitled to just compensation under the Federal Control Act, and also the sums required for dividends declared and paid during the same period, including, also, in addition, a sum equal to that proportion of such last dividend which the period between its payment and the termination of the period for which the carrier is entitled to just compensation under the Federal Control Act bears to the last dividend period; and (2) may, in his discretion, pay to such carrier the whole or any part of the remainder of such estimated amount of just compensation.

(b) The acceptance of any benefits by a carrier under this section—

(1) shall not deprive it of the right to claim additional compensation, which, unless agreed upon, shall be ascertained in the manner provided in section 3 of the Federal Control Act; but

(2) shall constitute an acceptance by the carrier of all the provisions of the Federal Control Act as modified by this Act, and obligate the carrier to pay to the United States, with interest at the rate of 6 per centum per annum from a date or dates fixed in proceedings under section 3 of the Federal

Control Act, the amount by which the sums received on account of such compensation, under this section or otherwise, exceed the sum found due in such proceedings.

Reimbursement of Deficits During Federal Control

SEC. 204. (a) When used in this section—

The term "carrier" means a carrier by railroad which, during any part of the period of federal control, engaged as a common carrier in general transportation, and competed for traffic, or connected, with a railroad under federal control, and which sustained a deficit in its railway operating income for that portion (as a whole) of the period of federal control during which it operated its own railroad or system of transportation; but does not include any street or interurban electric railway which has as its principal source of operating revenue urban, suburban, or interurban passenger traffic or sale of power, heat, and light, or both; and the term "test period" means the three years ending June 30, 1917.

(b) For the purposes of this section—

Railway operating income or any deficit therein for the period of federal control shall be computed in a manner similar to that provided in section 209 with respect to such income or deficit for the guaranty period; and

Railway operating income or any deficit therein for the test period shall be computed in the manner provided in section 1 of the Federal Control Act.

(c) As soon as practicable after March 1, 1920, the Commission shall ascertain for every carrier, for every month of the period of federal control during which its railroad or system of transportation was not under federal operation, its deficit in railway operating income, if any, and its railway operating income, if any, (hereinafter called "federal control return"), and the average of its deficit in railway operating income, if any, and of its railway operating income, if any, for the three corresponding months of the test period taken together, (hereinafter called "test period return"): *Provided*, That "test period return," in the case of a carrier which operated its railroad or system of transportation for at least one year during, but not for the whole of, the test period, means its railway operating income, or the deficit therein, for the corresponding month during the test period, or the average thereof for the corresponding months during the test period taken together, during which the carrier operated its railroad or system of transportation.

(d) For every month of the period of federal control during which the railroad or system of transportation of the carrier was not under federal operation, the Commission shall then ascertain (1) the difference between its federal control return, if a deficit, and its test period return, if a smaller deficit, or (2) the difference between its test period return, if an income, and its federal control return, if a smaller income, or (3) the sum of its federal control return, if a deficit, plus its test period return, if an income. The sum of such amounts shall be credited to the carrier.

(e) For every such month the Commission shall then ascertain (1) the difference between the carrier's federal control return, if an income, and its test period return, if a smaller income, or (2) the difference between its test period return, if a deficit, and its federal control return, if a smaller deficit, or (3) the sum of its federal control return, if an income, plus its test period return, if a deficit. The sum of such amounts shall be credited to the United States.

(f) If the sum of the amounts so credited to the carrier under subdivision (d) exceeds the sum of the amounts so credited to the United States under subdivision (e), the difference shall be payable to the carrier. In the case of a carrier which operated its railroad or system of transportation for less than a year during, or for none of, the test period, the foregoing computations shall not be used, but there shall be payable to such carrier its deficit in railway operating income for that portion (as a whole) of the period of federal control during which it operated its own railroad or system of transportation.

(g) The Commission shall promptly certify to the secretary of the treasury the several amounts payable to carriers under paragraph (f). The secretary of the treasury is hereby authorized and directed thereupon to draw warrants in favor of each such carrier upon the treasury of the United States for the amount shown in such certificate as payable thereto. An

amount sufficient to pay such warrants is hereby appropriated out of any money in the treasury not otherwise appropriated.

Inspection of Carriers' Records

SEC. 205. The President shall have the right, at all reasonable times until the affairs of federal control are concluded, to inspect the property and records of all carriers whose railroads or systems of transportation were at any time under federal control, whenever such inspection is necessary or appropriate (1) to protect the interests of the United States, or (2) to supervise matters being handled for the United States by agents of the carriers, or (3) to secure information concerning matters arising during federal control, and such carriers shall provide all reasonable facilities therefor, including the issuance of free transportation to all agents of the President while traveling on official business for these purposes.

Such carriers shall, at their expense, upon the request of the President, or those duly authorized by him, furnish all necessary and proper information and reports compiled from the records made or kept during the period of federal control affecting their respective lines, and shall keep and continue such records and furnish like information and reports compiled therefrom.

Any carrier which refuses or obstructs such inspection, or which willfully fails to provide reasonable facilities therefor, or to furnish such information or reports shall be liable to a penalty of \$500 for each day of the continuance of such offense, which shall accrue to the United States and may be recovered in a civil action to be brought by the United States.

Causes of Action Arising Out of Federal Control

SEC. 206. (a) Actions at law, suits in equity and proceedings in admiralty, based on causes of action arising out of the possession, use, or operation by the President of the railroad or system of transportation of any carrier (under the provisions of the Federal Control Act, or of the Act of August 29, 1916) of such character as prior to federal control could have been brought against such carrier, may, after the termination of federal control, be brought against an agent designated by the President for such purpose, which agent shall be designated by the President within thirty days after the passage of this Act. Such actions, suits, or proceedings may, within the periods of limitation now prescribed by state or federal statutes but not later than two years from the date of the passage of this Act, be brought in any court which but for federal control would have had jurisdiction of the cause of action had it arisen against such carrier.

(b) Process may be served upon any agent or officer of the carrier operating such railroad or system of transportation, if such agent or officer is authorized by law to be served with process in proceedings brought against such carrier and if a contract has been made with such carrier by or through the President for the conduct of litigation arising out of operation during federal control. If no such contract has been made process may be served upon such agents or officers as may be designated by or through the President. The agent designated by the President under subdivision (a) shall cause to be filed, upon the termination of federal control, in the office of the clerk of each district court of the United States, a statement naming all carriers with whom he has contracted for the conduct of litigation arising out of operation during federal control, and a like statement designating the agents or officers upon whom process may be served in actions, suits, and proceedings arising in respect to railroads or systems of transportation with the owner of which no such contract has been made; and such statements shall be supplemented from time to time, if additional contracts are made or other agents appointed.

(c) Complaints praying for reparation on account of damage claimed to have been caused by reason of the collection or enforcement by or through the President during the period of federal control of rates, fares, charges, classifications, regulations, or practices (including those applicable to interstate, foreign, or intrastate traffic) which were unjust, unreasonable, unjustly discriminatory, or unduly or unreasonably prejudicial, or otherwise in violation of the Interstate Commerce Act, may be filed with the Commission, within one year after the termination of federal control, against the agent designated by the President under subdivision (a), naming in the petition the

railroad or system of transportation against which such complaint would have been brought if such railroad or system had not been under federal control at the time the matter complained of took place. The Commission is hereby given jurisdiction to hear and decide such complaints in the manner provided in the Interstate Commerce Act, and all notices and orders in such proceedings shall be served upon the agent designated by the President under subdivision (a).

(d) Actions, suits, proceedings, and reparation claims, of the character above described pending at the termination of federal control shall not abate by reason of such termination, but may be prosecuted to final judgment, substituting the agent designated by the President under subdivision (a).

(e) Final judgments, decrees, and awards in actions, suits, proceedings, or reparation claims, of the character above described, rendered against the agent designated by the President under subdivision (a), shall be promptly paid out of the revolving fund created by section 210.

(f) The period of federal control shall not be computed as a part of the periods of limitation in actions against carriers or in claims for reparation to the Commission for causes of action arising prior to federal control.

(g) No execution or process, other than on a judgment recovered by the United States against a carrier, shall be levied upon the property of any carrier where the cause of action on account of which the judgment was obtained grew out of the possession, use, control, or operation of any railroad or system of transportation by the President under federal control.

Refunding of Carriers' Indebtedness to United States

SEC. 207. (a) As soon as practicable after the termination of federal control the President shall ascertain (1) the amount of the indebtedness of each carrier to the United States, which may exist at the termination of federal control, incurred for additions and betterments made during federal control and properly chargeable to capital account; (2) the amount of indebtedness of such carrier to the United States otherwise incurred; and (3) the amount of the indebtedness of the United States to such carrier arising out of federal control. The amount under clause (3) may be set off against either or both of the amounts under clauses (1) and (2), so far as deemed wise by the President, but only to the extent permitted under any contract now or hereafter made between such carrier and the United States in respect to the matters of federal control, or, where no such contract exists, to the extent permitted under paragraph (b) of section 7 of the standard contract between the United States and the carriers relative to deductions from compensation: *Provided*, That such right of set-off shall not be so exercised as to prevent such carrier from having the sums required for interest, taxes, and other corporate charges and expenses referred to in paragraph (b) of section 7 of such standard contract, accruing during federal control, and also the sums required for dividends declared and paid during federal control, including, also in addition, a sum equal to that proportion of such last dividend which the period between its payment and the termination of federal control bears to the last regular dividend period: *And provided further*, That such right of set-off shall not be exercised unless there shall have first been paid such sums in addition as may be necessary to provide the carrier with working capital in amount not less than one twenty-fourth of its operating expenses for the calendar year 1919.

(b) Any remaining indebtedness of the carrier to the United States in respect to such additions and betterments shall, at the request of the carrier, be funded for a period of ten years from the termination of federal control, or a shorter period at the option of the carrier, with interest at the rate of 6 per centum per annum, payable semi-annually, subject to the right of such carrier to pay, on any interest-payment day, the whole or any part of such indebtedness. Any carrier obtaining the funding of such indebtedness as aforesaid shall give, in the discretion of the President, such security, in such form and upon such terms, as he may prescribe.

(c) If the President and the various carriers, or any of them, shall enter into an agreement for funding, through the medium of car trust certificates, or otherwise, the indebtedness of any such carrier to the United States incurred for equipment ordered for the benefit of such carrier, such

indebtedness so funded shall not be refundable under the foregoing provisions.

(d) Any other indebtedness of any such carrier to the United States which may exist after the settlement of accounts between the United States and the carrier and is then due, shall be evidenced by notes payable in one year from the termination of federal control, or a shorter period at the option of the carrier, with interest at the rate of 6 per centum per annum, and secured by such collateral security as the President may deem it advisable to require.

(e) With respect to any bonds, notes, or other securities acquired, under the provisions of this section or of the Federal Control Act or of the Act entitled "An Act to provide for the reimbursement of the United States for motive power, cars and other equipment ordered for railroads and systems of transportation under federal control, and for other purposes," approved November 19, 1919, the President shall have the right to make such arrangements for extension of the time of payment or for the exchange of any of them for other securities, or partly for cash and partly for securities, as may be provided for in any agreement entered into by him or as may in his judgment seem desirable.

(f) Carriers may, by agreement with the President, issue notes or other evidences of indebtedness, secured by equipment trust agreements, for equipment purchased during federal control by or through the President under section 6 of the Federal Control Act, and allocated to such carriers respectively; and the filing of such equipment trust agreements with the Commission shall constitute notice thereof to all the world.

(g) A carrier may issue evidences of indebtedness pursuant to this section without the authorization or approval of any authority, state or federal, and without compliance with any requirement, state or federal, as to notification.

Existing Rates to Continue in Effect.

Sec. 208. (a) All rates, fares, and charges, and all classifications, regulations, and practices, in any wise changing, affecting, or determining, any part or the aggregate of rates, fares, or charges, or the value of the service rendered, which on February 29, 1920, are in effect on the lines of carriers subject to the Interstate Commerce Act, shall continue in force and effect until thereafter changed by state or federal authority, respectively, or pursuant to authority of law; but prior to September 1, 1920, no such rate, fare, or charge shall be reduced, and no such classification, regulation, or practice shall be changed in such manner as to reduce any such rate, fare, or charge, unless such reduction or change is approved by the Commission.

(b) All divisions of joint rates, fares, or charges, which on February 29, 1920, are in effect between the lines of carriers subject to the Interstate Commerce Act, shall continue in force and effect until thereafter changed by mutual agreement between the interested carriers or by state or federal authorities, respectively.

(c) Any land grant railroad organized under the Act of July 28, 1866 (chapter 300), shall receive the same compensation for transportation of property and troops of the United States as is paid to land grant railroads organized under the Land Grant Act of March 3, 1863, and the Act of July 27, 1866, chapter 278.

Guaranty to Carriers After Termination of Federal Control

Sec. 209. (a) When used in this section—the term "carrier" means (1) a carrier by railroad or partly by railroad and partly by water, whose railroad or system of transportation is under federal control at the time federal control terminates, or which has heretofore engaged as a common carrier in general transportation and competed for traffic, or connected, with a railroad at any time under federal control; and (2) a sleeping car company whose system of transportation is under federal control at the time federal control terminates; but does not include a street or interurban electric railway not under federal control at the time federal control terminates, which has as its principal source of operating

revenue urban, suburban, or interurban passenger traffic or sale of power, heat, and light, or both;

The term "guaranty period" means the six months beginning March 1, 1920.

The term "test period" means the three years ending June 30, 1917; and

The term "railway operating income" and other references to accounts of carriers by railroad shall, in the case of a sleeping car company, be construed as indicating the appropriate corresponding accounts in the accounting system prescribed by the Commission.

(b) This section shall not be applicable to any carrier which does not on or before March 15, 1920, file with the Commission a written statement that it accepts all the provisions of this section.

(c) The United States hereby guarantees—

(1) With respect to any carrier with which a contract (exclusive of so-called co-operative contracts or waivers) has been made fixing the amount of just compensation under the Federal Control Act, that the railway operating income of such carrier for the guaranty period as a whole shall not be less than one-half the amount named in such contract as annual compensation, or, where the contract fixed a lump sum as compensation for the whole period of federal operation, that the railway operating income of such carrier for the guaranty period as a whole shall not be less than an amount which shall bear the same proportion to the lump sum so fixed as six months bears to the number of months during which such carrier was under federal operation, including in both cases the increases in such compensation provided for in section 4 of the Federal Control Act;

(2) With respect to any carrier entitled to just compensation under the Federal Control Act, with which such a contract has not been made, that the railway operating income of such carrier for the guaranty period as a whole shall not be less than one-half of the annual amount estimated by the President as just compensation for such carrier under the Federal Control Act, including the increases in such compensation provided for in section 4 of the Federal Control Act. If any such carrier does not accept the President's estimate respecting its just compensation, and if in proceedings under section 3 of the Federal Control Act it is determined that a larger or smaller annual amount is due as just compensation, the guaranty under this paragraph shall be increased or decreased accordingly;

(3) With respect to any carrier, whether or not entitled to just compensation under the Federal Control Act, with which such a contract has not been made, and for which no estimate of just compensation is made by the President, and which for the test period as a whole sustained a deficit in railway operating income, the guaranty shall be a sum equal to (a) the amount by which any deficit in its railway operating income for the guaranty period as a whole exceeds one-half of its average annual deficit in railway operating income for the test period, plus (b) an amount equal to one-half the annual sum fixed by the President under section 4 of the Federal Control Act.

(4) With respect to any carrier not entitled to just compensation under the Federal Control Act, which for the test period as a whole had an average annual railway operating income, that the railway operating income of such carrier for the guaranty period as a whole shall not be less than one-half the average annual railway operating income of such carrier during the test period.

(d) If for the guaranty period as a whole the railway operating income of any carrier entitled to a guaranty under paragraph (1), (2), or (4) of subdivision (c) is in excess of the minimum railway operating income guaranteed in such paragraph, such carrier shall forthwith pay the amount of such excess into the treasury of the United States. If for the guaranty period as a whole the railway operating income of any carrier entitled to a guaranty under paragraph (3) of subdivision (c) is in excess of one-half of the annual sum fixed by the President with respect to such carrier under section 4 of the Federal Control Act, such carrier shall forthwith pay the amount of such excess into the treasury of the United States. The amount so paid into the treasury

of the United States shall be added to the funds made available under section 202 for the purposes indicated in such section. Notwithstanding the provisions of this subdivision, any carrier may retain out of any such excess any amount necessary to enable it to pay its fixed charges accruing during the guaranty period.

(e) For the purposes of this section railway operating income, or any deficit therein, for the test period shall be computed in the manner provided for in section 1 of the Federal Control Act.

(f) In computing railway operating income, or any deficit therein, for the guaranty period for the purposes of this section—

(1) Debits and credits arising from the accounts, called in the monthly reports to the Commission equipment rents and joint facility rents, shall be included, but debits and credits arising from the operation of such street electric passenger railways, including railways commonly called interurbans, as are not under federal control at the time of termination thereof, shall be excluded;

(2) Proper adjustments shall be made (a) in case any lines which were, during any portion of the period of federal control, a part of the railroad or system of transportation of the carrier, and whose railway operating income was included in such income of the carrier for the test period, do not continue to be a part of such railroad or system of transportation during the entire guaranty period, and (b) in case of any lines acquired by, leased to, or consolidated with, the railroad or system of transportation of the carrier at any time since the end of the test period and prior to the expiration of the guaranty period, for which separate operating returns to the Commission are not made in respect to the entire portion of the guaranty period;

(3) There shall not be included in operating expenses, for maintenance of way and structures, or for maintenance of equipment, more than an amount fixed by the Commission. In fixing such amount the Commission shall so far as practicable apply the rule set forth in the proviso in paragraph (a) of section 5 of the "standard contract" between the United States and the carriers (whether or not such contract has been entered into with the carrier whose railway operating income is being computed);

(4) There shall not be included any taxes paid under Title I or II of the Revenue Act of 1917, or such portion of the taxes paid under Title II or III of the Revenue Act of 1918 as by the terms of such Act are to be treated as levied by an Act in amendment of Title I or II of the Revenue Act of 1917; and

(5) The Commission shall require the elimination and restatement of the operating expenses and revenues (other than for maintenance of way and structures, or maintenance of equipment) for the guaranty period, to the extent necessary to correct and exclude any disproportionate or unreasonable charge to such expenses or revenues for such period, or any charge to such expenses or revenues for such period which, under a proper system of accounting is attributable to another period.

(g) The Commission shall, as soon as practicable after the expiration of the guaranty period, ascertain and certify to the secretary of the treasury the several amounts necessary to make good the foregoing guaranty to each carrier. The secretary of the treasury is hereby authorized and directed thereupon to draw warrants in favor of each such carrier upon the treasury of the United States, for the amount shown in such certificate as necessary to make good such guaranty. An amount sufficient to pay such warrants is hereby appropriated out of any money in the treasury not otherwise appropriated.

(h) Upon application of any carrier to the Commission, asking that during the guaranty period there may be advanced to it from time to time such sums, not in excess of the estimated amount necessary to make good the guaranty, as are necessary to enable it to meet its fixed charges and operating expenses, the Commission may certify to the secretary of the treasury the amount of, and times at which, such advances, if any, shall be made. The secretary of the treasury, on receipt of such certificate, is authorized and directed to make the advances in the amounts and at the time, specified in the certificate, upon the execution by the carrier of a contract, secured in such manner as the secretary may determine, that upon final determination of the amount of the guaranty provided for by this section such carrier will repay to the United States any amounts which it has received from such advances in excess of the guaranty, with interest at the rate of 6 per centum per annum from the time such excess was paid.

There is hereby appropriated out of any money in the treasury not otherwise appropriated, a sum sufficient to enable the secretary of the treasury to make the advances referred to in this subdivision.

American Railway Express Company

(i) If the American Railway Express Company shall, on or before March 15, 1920, file with the Commission a written statement that it accepts all the provisions of this subdivision, the contract of June 26, 1918, between such company and the director general of railroads, as amended and continued by agreement dated November 21, 1918, shall remain in full force and effect during the guaranty period in so far as the same constitutes a guaranty on the part of the United States to such company against a deficit in operating income.

In computing operating income, and any deficit therein, for the guaranty period for the purposes of this subdivision, the Commission shall require the elimination and restatement of the operating expenses and revenues for the guaranty period, to the extent necessary to correct and exclude any abnormal or unreasonable charge to such expenses or revenues for such period, or any charge to such expenses or revenues for such period which under a proper system of accounting is attributable to another period, and to exclude from operating expenses so much of the charge for payment for express privileges to carriers on whose lines the express traffic is carried as is in excess of 50.25 per centum of gross express revenue.

For the guaranty period the American Railway Express Company shall pay to every carrier which accepts the provisions of this section, as provided in subdivision (b) hereof, 50.25 per centum of the gross revenue earned on the transportation of all its express traffic on the carrier's lines, and every such carrier shall accept from the American Railway Express Company such percentage of the gross revenue as its compensation. In arriving at the gross revenue on through or joint express traffic, the method of dividing the revenue between the carriers shall be that agreed upon between the carriers and such express company and approved by the Commission.

If for the guaranty period as a whole the American Railway Express Company does not have a deficit in operating income, it shall forthwith pay the amount of its operating income for such period into the treasury of the United States. The amount so paid shall be added to the funds made available under section 202 for the purposes indicated in such section.

The Commission shall, as soon as practicable after the expiration of the guaranty period, certify to the secretary of the treasury the amount necessary to make good the foregoing guaranty to the American Railway Express Company. The secretary of the treasury is hereby authorized and directed thereupon to draw warrants in favor of such company upon the treasury of the United States for the amount shown in such certificate as necessary to make good such guaranty. An amount sufficient to pay such warrants is hereby appropriated out of any money in the treasury not otherwise appropriated.

Upon application of the American Railway Express Company to the Commission, asking that during the guaranty period there may be advanced to it from time to time such sums, not in excess of the estimated amount necessary to make good the guaranty, as are necessary to enable it to meet its operating expenses, the Commission may certify to the secretary of the treasury the amount of, and times at which, such advances, if any, shall be made. The secretary of the treasury, on receipt of such certificate, is authorized and directed to make the advances in the amounts and at the times specified in the certificate, upon the execution by such company of a contract, secured in such manner as the secretary may determine, that upon final determination of the amount of the guaranty provided for by this subdivision such company will repay to the United States any amounts which it has received from such advances in excess of the guaranty, with interest at the rate of 6 per centum per annum from the time such excess was paid. There is hereby appropriated out of any money in the treasury not otherwise appropriated a sum sufficient to enable the secretary of the treasury to make the advances referred to in this subdivision.

New Loans to Railroads

Sec. 210. (a) For the purpose of enabling carriers by railroad subject to the Interstate Commerce Act properly to serve

the public during the transition period immediately following the termination of federal control, any such carrier may, at any time after the passage of this Act and before the expiration of two years after the termination of federal control, make application to the Commission for a loan from the United States, setting forth the amount of the loan and the term for which it is desired, the purpose of the loan and the uses to which it will be applied, the present and prospective ability of the applicant to repay the loan and meet the requirements of its obligations in that regard, the character and value of the security offered, and the extent to which the public convenience and necessity will be served. The application shall be accompanied by statements showing such facts and details as the Commission may require with respect to the physical situation, ownership, capitalization, indebtedness, contract obligations, operation, and earning power of the applicant, together with such other facts relating to the propriety and expediency of granting the loan applied for and the ability of the applicant to make good the obligation, as the Commission may deem pertinent to the inquiry.

(b) If the Commission, after such hearing and investigation, with or without notice, as it may direct, finds that the making, in whole or in part, of the proposed loan by the United States is necessary to enable the applicant properly to meet the transportation needs of the public, and that the prospective earning power of the applicant and the character and value of the security offered are such as to furnish reasonable assurance of the applicant's ability to repay the loan within the time fixed therefor, and to meet its other obligations in connection with such loan, the Commission may certify to the secretary of the treasury its findings of fact and its recommendations as to: the amount of the loan which is to be made; the time, not exceeding five years from the making thereof, within which it is to be repaid; the character of the security which is to be offered therefor; and the terms and conditions of the loan.

(c) Upon receipt of such certificate from the Commission, the secretary of the treasury, at any time before the expiration of twenty-six months after the termination of federal control, is authorized to make a loan, not exceeding the maximum amount recommended in such certificate, out of any moneys in the revolving fund provided for in this section. All such loans shall bear interest at the rate of 6 per centum per annum, payable semi-annually to the secretary of the treasury and to be placed to the credit of the revolving fund provided for in this section. The time, not exceeding five years from the making thereof, within which such loan is to be repaid, the security which is to be taken therefor, which shall be adequate to secure the loan, the terms and conditions of the loan, and the form of the obligation to be entered into, shall be prescribed by the secretary of the treasury.

(d) The Commission or the secretary of the treasury may call upon the Federal Reserve Board for advice and assistance with respect to any such application or loan.

(e) There is hereby appropriated out of any moneys in the treasury not otherwise appropriated the sum of \$300,000,000, which shall be used as a revolving fund for the purpose of making the loans provided for in this section, and for paying the judgments, decrees, and awards referred to in subdivision (e) of section 206.

(f) A carrier may issue evidences of indebtedness to the United States pursuant to this section without the authorization or approval of any authority, state or federal, and without compliance with any requirement, state or federal, as to notification.

Execution of Powers of President

Sec. 211. All powers and duties conferred or imposed upon the President by the preceding section of this Act, except the designation of the agent under section 206, may be executed by him through such agency or agencies as he may determine.

Title III—Disputes Between Carriers and Their Employees and Subordinate Officials

Sec. 300. When used in this title—

(1) The term "carrier" includes any express company, sleeping car company, and any carrier by railroad, subject to the Interstate Commerce Act, except a street, interurban, or suburban electric railway not operating as a part of a general steam railroad system of transportation;

(2) The term "Adjustment Board" means any Railway Board of Labor Adjustment established under section 302;

(3) The term "Labor Board" means the Railroad Labor Board;

(4) The term "commerce" means commerce among the several states or between any state, territory, or the District of Columbia and any foreign nation, or between any territory or the District of Columbia and any state, or between any territory and any other territory, or between any territory and the District of Columbia, or within any territory or the District of Columbia, or between points in the same state but through any other state or any territory or the District of Columbia or any foreign nation; and

(5) The term "subordinate official" includes officials of carriers of such class or rank as the Commission shall designate by regulation formulated and issued after such notice and hearing as the Commission may prescribe, to the carriers, and employees and subordinate officials of carriers, and organizations thereof, directly to be affected by such regulations.

SEC. 301. It shall be the duty of all carriers and their officers, employees, and agents to exert every reasonable effort and adopt every available means to avoid any interruption to the operation of any carrier growing out of any dispute between the carrier and the employees or subordinate officials thereof. All such disputes shall be considered and, if possible, decided in conference between representatives designated and authorized so to confer by the carriers, or the employees or subordinate officials thereof, directly interested in the dispute. If any dispute is not decided in such conference, it shall be referred by the parties thereto to the board which under the provisions of this title is authorized to hear and decide such dispute.

SEC. 302. Railroad Boards of Labor Adjustment may be established by agreement between any carrier, group of carriers, or the carriers as a whole, and any employees or subordinate officials of carriers, or organization or group of organizations thereof.

SEC. 303. Each such Adjustment Board shall, (1) upon the application of the chief executive of any carrier or organization of employees or subordinate officials whose members are directly interested in the dispute, (2) upon the written petition signed by 100 unorganized employees or subordinate officials directly interested in the dispute, (3) upon the Adjustment Board's own motion, or (4) upon the request of the Labor Board whenever such board is of the opinion that the dispute is likely substantially to interrupt commerce, receive for hearing, and as soon as practicable and with due diligence decide, any dispute involving only grievances, rules, or working conditions, not decided as provided in section 301, between the carrier and its employees or subordinate officials, who are, or any organization thereof which is, in accordance with the provisions of section 302, represented upon any such Adjustment Board.

SEC. 304. There is hereby established a board to be known as the "Railroad Labor Board" and to be composed of nine members as follows:

(1) Three members constituting the labor group, representing the employees and subordinate officials of the carriers, to be appointed by the President, by and with the advice and consent of the Senate, from not less than six nominees whose nominations shall be made and offered by such employees in such manner as the Commission shall by regulation prescribe;

(2) Three members, constituting the management group, representing the carriers, to be appointed by the President, by and with the advice and consent of the Senate, from not less than six nominees whose nominations shall be made and offered by the carriers in such manner as the Commission shall by regulation prescribe; and

(3) Three members, constituting the public group, representing the public, to be appointed directly by the President, by and with the advice and consent of the Senate.

Any vacancy on the Labor Board shall be filled in the same manner as the original appointment.

SEC. 305. If either the employees or the carriers fail to make nominations and offer nominees in accordance with the regulations of the Commission, as provided in paragraphs (1) and (2) of section 304, within thirty days after the passage of this Act in case of any original appointment to the office of member of the Labor Board, or in case of a vacancy in any such office within fifteen days after such vacancy occurs, the President shall thereupon directly make the appointment, by and with the advice and consent of the Senate. In making any such appointment the President shall, as far as he deems it

practicable, select an individual associated in interest with the carriers or employees thereof, whichever he is to represent.

SEC. 306. (a) Any member of the Labor Board who during his term of office is an active member or in the employ of or holds any office in any organization of employees or subordinate officials, or any carrier, or owns any stock or bond thereof, or is pecuniarily interested therein, shall at once become ineligible for further membership upon the Labor Board; but no such member is required to relinquish honorary membership in, or his rights in any insurance or pension or other benefit fund maintained by, any organization of employees or subordinate officials or by a carrier.

(b) Of the original members of the Labor Board, one from each group shall be appointed for a term of three years, one for two years, and one for one year. Their successors shall hold office for terms of five years, except that any member appointed to fill a vacancy shall be appointed only for the unexpired term of the member whom he succeeds. Each member shall receive from the United States an annual salary of \$10,000. A member may be removed by the President for neglect of duty or malfeasance in office, but for no other cause.

SEC. 307. (a) The Labor Board shall hear, and as soon as practicable and with due diligence decide, any dispute involving grievances, rules, or working conditions, in respect to which any Adjustment Board certifies to the Labor Board that in its opinion the Adjustment Board has failed or will fail to reach a decision within a reasonable time, or in respect to which the Labor Board determines that any Adjustment Board has so failed or is not using due diligence in its consideration thereof. In case any Adjustment Board is not organized under the provisions of section 302, the Labor Board, (1) upon the application of the chief executive of any carrier or organization of employees or subordinate officials whose members are directly interested in the dispute, (2) upon a written petition signed by 100 unorganized employees or subordinate officials directly interested in the dispute, or (3) upon the Labor Board's own motion if it is of the opinion that the dispute is likely substantially to interrupt commerce, shall receive for hearing, and as soon as practicable and with due diligence decide, any dispute involving grievances, rules, or working conditions which is not decided as provided in section 301 and which such Adjustment Board would be required to receive for hearing and decision under the provisions of section 303.

(b) The Labor Board, (1) upon the application of the chief executive of any carrier or organization of employees or subordinate officials whose members are directly interested in the dispute, (2) upon a written petition signed by 100 unorganized employees or subordinate officials directly interested in the dispute, or (3) upon the Labor Board's own motion if it is of the opinion that the dispute is likely substantially to interrupt commerce, shall receive for hearing, and as soon as practicable and with due diligence decide, all disputes with respect to the wages or salaries of employees or subordinate officials of carriers, not decided as provided in section 301. The Labor Board may upon its own motion within ten days after the decision, in accordance with the provisions of section 301, of any dispute with respect to wages or salaries of employees or subordinate officials of carriers, suspend the operation of such decision if the Labor Board is of the opinion that the decision involves such an increase in wages or salaries as will be likely to necessitate a substantial readjustment of the rates of any carrier. The Labor Board shall hear any decision so suspended and as soon as practicable and with due diligence decide to affirm or modify such suspended decision.

(c) A decision by the Labor Board under the provisions of paragraphs (a) or (b) of this section shall require the concurrence therein of at least 5 of the 9 members of the Labor Board: *Provided*, That in case of any decision under paragraph (b), at least one of the representatives of the public shall concur in such decision. All decisions of the Labor Board shall be entered upon the records of the board and copies thereof, together with such statement of facts bearing thereon as the board may deem proper, shall be immediately communicated to the parties to the dispute, the President, each Adjustment Board, and the Commission, and shall be given further publicity in such manner as the Labor Board may determine.

(d) All the decisions of the Labor Board in respect to wages or salaries and of the Labor Board or an Adjustment Board in respect to working conditions of employees or subordinate officials of carriers shall establish rates of wages and salaries and standards of working conditions which in the opinion of

the board are just and reasonable. In determining the justness and reasonableness of such wages and salaries or working conditions the board shall, so far as applicable, take into consideration among other relevant circumstances:

- (1) The scales of wages paid for similar kinds of work in other industries;
- (2) The relation between wages and the cost of living;
- (3) The hazards of the employment;
- (4) The training and skill required;
- (5) The degree of responsibility;
- (6) The character and regularity of the employment; and
- (7) Inequalities of increases in wages or of treatment, the result of previous wage orders or adjustments.

SEC. 308. The Labor Board—

- (1) Shall elect a chairman by majority vote of its members;
- (2) Shall maintain central offices in Chicago, Illinois, but the Labor Board may, whenever it deems it necessary, meet at such other place as it may determine;

(3) Shall investigate and study the relations between carriers and their employees, particularly questions relating to wages, hours of labor, and other conditions of employment and the respective privileges, rights, and duties of carriers and employees, and shall gather, compile, classify, digest, and publish, from time to time, data and information relating to such questions to the end that the Labor Board may be properly equipped to perform its duties under this title and that the members of the Adjustment Boards and the public may be properly informed;

- (4) May make regulations necessary for the efficient execution of the functions vested in it by this title; and

(5) Shall at least annually collect and publish the decisions and regulations of the Labor Board and the Adjustment Boards and all court and administrative decisions and regulations of the Commission in respect to this title, together with a cumulative index-digest thereof.

SEC. 309. Any party to any dispute to be considered by an Adjustment Board or by the Labor Board shall be entitled to a hearing either in person or by counsel.

SEC. 310. (a) For the efficient administration of the functions vested in the Labor Board by this title, any member thereof may require, by subpoena issued and signed by himself, the attendance of any witness and the production of any book, paper, document, or other evidence from any place in the United States at any designated place of hearing, and the taking of a deposition before any designated person having power to administer oaths. In the case of a deposition the testimony shall be reduced to writing by the person taking the deposition or under his direction, and shall then be subscribed to by the deponent. Any member of the Labor Board may administer oaths and examine any witness. Any witness summoned before the board and any witness whose deposition is taken shall be paid the same fees and mileage as are paid witnesses in the courts of the United States.

(b) In case of failure to comply with any subpoena or in case of the contumacy of any witness appearing before the Labor Board, the board may invoke the aid of any United States district court. Such court may thereupon order the witness to comply with the requirements of such subpoena, or to give evidence touching the matter in question, as the case may be. Any failure to obey such order may be punished by such court as a contempt thereof.

(c) No person shall be excused from so attending and testifying or deposing, nor from so producing any book, paper, document, or other evidence on the ground that the testimony or evidence, documentary or otherwise, required of him may tend to incriminate him or subject him to a penalty or forfeiture; but no natural person shall be prosecuted or subjected to any penalty or forfeiture for or on account of any transaction, matter, or thing, as to which in obedience to a subpoena and under oath, he may so testify or produce evidence, documentary or otherwise. But no person shall be exempt from prosecution and punishment for perjury committed in so testifying.

SEC. 311. (a) When necessary to the efficient administration of the functions vested in the Labor Board by this title, any member, officer, employee, or agent thereof, duly authorized in writing by the board, shall at all reasonable times for the purpose of examination have access to and the right to copy any book, account, record, paper, or correspondence relating to any matter which the board is authorized to consider or investigate. Any person who upon demand refuses any duly authorized member, officer, employee, or agent of the Labor Board such right of access

or copying, or hinders, obstructs, or resists him in the exercise of such right, shall upon conviction thereof be liable to a penalty of \$500 for each such offense. Each day during any part of which such offense continues shall constitute a separate offense. Such penalty shall be recoverable in a civil suit brought in the name of the United States, and shall be covered into the Treasury of the United States as miscellaneous receipts.

(b) Every officer or employee of the United States, whenever requested by any member of the Labor Board or an Adjustment Board duly authorized by the board for the purpose, shall supply to such board any data or information pertaining to the administration of the functions vested in it by this title, which may be contained in the records of his office.

(c) The President is authorized to transfer to the Labor Board any books, papers, or documents pertaining to the administration of the functions vested in the board by this title, which are in the possession of any agency, or railway board of adjustment in connection therewith, established for executing the powers granted the President under the Federal Control Act and which are no longer necessary to the administration of the affairs of such agency.

SEC. 312. Prior to September 1, 1920, each carrier shall pay to each employee or subordinate official thereof wages or salary at a rate not less than that fixed by the decision of any agency, or railway board of adjustment in connection therewith, established for executing the powers granted the President under the Federal Control Act, in effect in respect to such employee or subordinate official immediately preceding 12:01 a. m. March 1, 1920. Any carrier acting in violation of any provision of this section shall upon conviction thereof be liable to a penalty of \$100 for each such offense. Each such action with respect to any such employee or subordinate official and each day or portion thereof during which the offense continues shall constitute a separate offense. Such penalty shall be recoverable in a civil suit brought in the name of the United States, and shall be covered into the treasury of the United States as miscellaneous receipts.

SEC. 313. The Labor Board, in case it has reason to believe that any decision of the Labor Board or of an Adjustment Board is violated by any carrier, or employee or subordinate official, or organization thereof, may upon its own motion after due notice and hearing to all persons directly interested in such violation, determine whether in its opinion such violation has occurred and make public its decision in such manner as it may determine.

SEC. 314. The Labor Board may (1) appoint a secretary, who shall receive from the United States an annual salary of \$5,000; and (2) subject to the provisions of the civil service laws, appoint and remove such officers, employees, and agents; and make such expenditures for rent, printing, telegrams, telephone, law books, books of reference, periodicals, furniture, stationery, office equipment, and other supplies and expenses, including salaries, traveling expenses of its members, secretary, officers, employees, and agents, and witness fees, as are necessary for the efficient execution of the functions vested in the board by this title and as may be provided for by Congress from time to time. All of the expenditures of the Labor Board shall be allowed and paid upon the presentation of itemized vouchers therefor approved by the chairman of the Labor Board.

SEC. 315. There is hereby appropriated for the fiscal year ending June 30, 1920, out of any money in the Treasury not otherwise appropriated, the sum of \$50,000, or so much thereof as may be necessary, to be expended by the Labor Board, for defraying the expenses of the maintenance and establishment of the board, including the payment of salaries as provided in this title.

SEC. 316. The powers and duties of the Board of Mediation and Conciliation created by the Act approved July 15, 1913, shall not extend to any dispute which may be received for hearing and decision by any Adjustment Board or the Labor Board.

Title IV—Amendments to Interstate Commerce Act

SEC. 400. The first four paragraphs of section 1 of the Interstate Commerce Act, as such paragraphs appear in section 7 of the Commerce Court Act, are hereby amended to read as follows:

"(1) That the provisions of this Act shall apply to common carriers engaged in—

"(a) The transportation of passengers or property wholly by

railroad, or partly by railroad and partly by water when both are used under a common control, management, or arrangement for a continuous carriage or shipment; or

"(b) The transportation of oil or other commodity, except water and except natural or artificial gas, by pipe line, or partly by pipe line and partly by railroad or by water; or

"(c) The transmission of intelligence by wire or wireless;—from one state or territory of the United States, or the District of Columbia, to any other state or territory of the United States, or the District of Columbia, or from one place in a territory to another place in the same territory, or from any place in the United States through a foreign country to any other place in the United States, or from or to any place in the United States to or from a foreign country, but only in so far as such transportation or transmission takes place within the United States.

"(2) The provisions of this Act shall also apply to such transportation of passengers and property and transmission of intelligence, but only in so far as such transportation or transmission takes place within the United States, but shall not apply—

"(a) To the transportation of passengers or property, or to the receiving, delivering, storage, or handling of property, wholly within one state and not shipped to or from a foreign country from or to any place in the United States as aforesaid;

"(b) To the transmission of intelligence by wire or wireless wholly within one state and not transmitted to or from a foreign country from or to any place in the United States as aforesaid; or

"(c) To the transportation of passengers or property by a carrier by water where such transportation would not be subject to the provisions of this Act except for the fact that such carrier absorbs, out of its port-to-port water rates or out of its proportional through rates, any switching, terminal, lighterage, car rental, trackage, handling, or other charges by a rail carrier for services within the switching, draying, lighterage, or corporate limits of a port terminal or district.

"(3) The term 'common carrier' as used in this Act shall include all pipe-line companies; telegraph, telephone, and cable companies operating by wire or wireless; express companies; sleeping-car companies; and all persons, natural or artificial, engaged in such transportation or transmission as aforesaid as common carriers for hire. Wherever the word 'carrier' is used in this Act it shall be held to mean 'common carrier.' The term 'railroad' as used in this Act shall include all bridges, car floats, lighters, and ferries used by or operated in connection with any railroad, and also all the road in use by any common carrier operating a railroad, whether owned or operated under a contract, agreement, or lease, and also all switches, spurs, tracks, terminals, and terminal facilities of every kind used or necessary in the transportation of the persons or property designated herein, including all freight depots, yards, and grounds, used or necessary in the transportation or delivery of any such property. The term 'transportation' as used in this Act shall include locomotives, cars, and other vehicles, vessels, and all instrumentalities and facilities of shipment or carriage, irrespective of ownership or of any contract, express or implied, for the use thereof, and all services in connection with the receipt, delivery, elevation, and transfer in transit, ventilation, refrigeration or icing, storage, and handling of property transported. The term 'transmission' as used in this Act shall include the transmission of intelligence through the application of electrical energy or other use of electricity, whether by means of wire, cable, radio apparatus, or other wire or wireless conductors or appliances, and all instrumentalities and facilities for and services in connection with the receipt, forwarding, and delivery of messages, communications, or other intelligence so transmitted, hereinafter also collectively called messages.

"(4) It shall be the duty of every common carrier subject to this Act engaged in the transportation of passengers or property to provide and furnish such transportation upon reasonable request therefor, and to establish through routes and just and reasonable rates, fares, and charges applicable thereto, and to provide reasonable facilities for operating through routes and to make reasonable rules and regulations with respect to the operation of through routes, and providing for reasonable compensation to those entitled thereto; and in case of joint rates, fares, or charges, to establish just, reasonable, and equitable divisions thereof as between the carriers subject to this Act

participating therein which shall not unduly prefer or prejudice any of such participating carriers.

"(5) All charges made for any service rendered or to be rendered in the transportation of passengers or property or in the transmission of intelligence by wire or wireless as aforesaid, or in connection therewith, shall be just and reasonable, and every unjust and unreasonable charge for such service or any part thereof is prohibited and declared to be unlawful: *Provided*, That messages by wire or wireless subject to the provisions of this Act may be classified into day, night, repeated, unrepeated, letter, commercial, press, government, and such other classes as are just and reasonable, and different rates may be charged for the different classes of messages: *And provided further*, That nothing in this Act shall be construed to prevent telephone, telegraph, and cable companies from entering into contracts with common carriers for the exchange of services.

"(6) It is hereby made the duty of all common carriers subject to the provisions of this Act to establish, observe, and enforce just and reasonable classifications of property for transportation, with reference to which rates, tariffs, regulations, or practices are or may be made or prescribed, and just and reasonable regulations and practices affecting classifications, rates, or tariffs, the issuance, form, and substance of tickets, receipts, and bills of lading, the manner and method of presenting, marking, packing, and delivering property for transportation, the facilities for transportation, the carrying of personal, sample, and excess baggage, and all other matters relating to or connected with the receiving, handling, transporting, storing, and delivery of property subject to the provisions of this Act which may be necessary or proper to secure the safe and prompt receipt, handling, transportation, and delivery of property subject to the provisions of this Act upon just and reasonable terms, and every unjust and unreasonable classification, regulation, and practice is prohibited and declared to be unlawful."

SEC. 401. The fifth, sixth, and seventh paragraphs of section 1 of the Interstate Commerce Act, as such paragraphs appear in section 7 of the Commerce Court Act, are hereby amended by inserting "(7)" at the beginning of such fifth paragraph, "(8)" at the beginning of such sixth paragraph, and "(9)" at the beginning of such seventh paragraph.

Car Service

SEC. 402. The paragraphs added to section 1 of the Interstate Commerce Act by the Act entitled "An Act to amend an Act entitled 'An Act to regulate commerce,' as amended, in respect of car service, and for other purposes," approved May 29, 1917, are hereby amended to read as follows:

"(10) The term 'car service' in this Act shall include the use, control, supply, movement, distribution, exchange, interchange, and return of locomotives, cars, and other vehicles used in the transportation of property, including special types of equipment, and the supply of trains, by any carrier by railroad subject to this Act.

"(11) It shall be the duty of every carrier by railroad subject to this Act to furnish safe and adequate car service and to establish, observe, and enforce just and reasonable rules, regulations, and practices with respect to car service; and every unjust and unreasonable rule, regulation, and practice with respect to car service is prohibited and declared to be unlawful.

"(12) It shall also be the duty of every carrier by railroad to make just and reasonable distribution of cars for transportation of coal among the coal mines served by it, whether located upon its line or lines or customarily dependent upon it for car supply. During any period when the supply of cars available for such service does not equal the requirements of such mines it shall be the duty of the carrier to maintain and apply just and reasonable ratings of such mines and to count each and every car furnished to or used by any such mine for transportation of coal against the mine. Failure or refusal so to do shall be unlawful, and in respect of each car not so counted shall be deemed a separate offense, and the carrier, receiver, or operating trustee so failing or refusing shall forfeit to the United States the sum of \$100 for each offense, which may be recovered in a civil action brought by the United States.

"(13) The Commission is hereby authorized by general or special orders to require all carriers by railroad subject to this Act, or any of them, to file with it from time to time their rules and regulations with respect to car service,

and the Commission may, in its discretion, direct that such rules and regulations shall be incorporated in their schedules showing rates, fares, and charges for transportation, and be subject to any or all of the provisions of this Act relating thereto.

"(14) The Commission may, after hearing, on a complaint or upon its own initiative without complaint, establish reasonable rules, regulations, and practices with respect to car service by carriers by railroad subject to this Act, including the compensation to be paid for the use of any locomotive, car, or other vehicle not owned by the carrier using it, and the penalties or other sanctions for nonobservance of such rules, regulations or practices.

"(15) Whenever the Commission is of opinion that shortage of equipment, congestion of traffic, or other emergency requiring immediate action exists in any section of the country, the Commission shall have, and it is hereby given, authority, either upon complaint or upon its own initiative without complaint, at once, if it so orders, without answer or other formal pleading by the interested carrier or carriers, and with or without notice, hearing, or the making or filing of a report, according as the Commission may determine: (a) to suspend the operation of any or all rules, regulations, or practices then established with respect to car service for such time as may be determined by the Commission; (b) to make such just and reasonable directions with respect to car service without regard to the ownership as between carriers of locomotives, cars, and other vehicles, during such emergency as in its opinion will best promote the service in the interest of the public and the commerce of the people, upon such terms of compensation as between the carriers as they may agree upon, or, in the event of their disagreement, as the Commission may after subsequent hearing find to be just and reasonable; (c) to require such joint or common use of terminals, including main-line track or tracks for a reasonable distance outside of such terminals, as in its opinion will best meet the emergency and serve the public interest, and upon such terms as between the carriers as they may agree upon, or, in the event of their disagreement, as the Commission may after subsequent hearing find to be just and reasonable; and (d) to give directions for preference or priority in transportation, embargoes, or movement of traffic under permits, at such time and for such periods as it may determine, and to modify, change, suspend, or annul them. In time of war or threatened war the President may certify to the Commission that it is essential to the national defense and security that certain traffic shall have preference or priority in transportation, and the Commission shall, under the power herein conferred, direct that such preference or priority be afforded.

"(16) Whenever the Commission is of opinion that any carrier by railroad subject to this Act is for any reason unable to transport the traffic offered it so as properly to serve the public, it may, upon the same procedure as provided in paragraph (15), make such just and reasonable directions with respect to the handling, routing, and movement of the traffic of such carrier and its distribution over other lines of roads, as in the opinion of the Commission will best promote the service in the interest of the public and the commerce of the people, and upon such terms as between the carriers as they may agree upon, or, in the event of their disagreement, as the Commission may after subsequent hearing find to be just and reasonable.

"(17) The directions of the Commission as to car service and to the matters referred to in paragraphs (15) and (16) may be made through and by such agents or agencies as the Commission shall designate and appoint for that purpose. It shall be the duty of all carriers by railroad subject to this Act, and of their officers, agents, and employees, to obey strictly and conform promptly to such orders or directions of the Commission, and in case of failure or refusal on the part of any carrier, receiver, or operating trustee to comply with any such order or direction such carrier, receiver, or trustee shall be liable to a penalty of not less than \$100 nor more than \$500 for each such offense and \$50 for each and every day of the continuance of such offense, which shall accrue to the United States and may be recovered in a civil

action brought by the United States: Provided, however, That nothing in this Act shall impair or affect the right of a state, in the exercise of its police power, to require just and reasonable freight and passenger service for intrastate business, except in so far as such requirement is inconsistent with any lawful order of the Commission made under the provisions of this Act.

Extension or Construction of Railroads

"(18) After ninety days after this paragraph takes effect no carrier by railroad subject to this Act shall undertake the extension of its line of railroad, or the construction of a new line of railroad, or shall acquire or operate any line of railroad, or extension thereof, or shall engage in transportation under this Act over or by means of such additional or extended line of railroad, unless and until there shall first have been obtained from the Commission a certificate that the present or future public convenience and necessity require or will require the construction, or operation, or construction and operation, of such additional or extended line of railroad, and no carrier by railroad subject to this Act shall abandon all or any portion of a line of railroad, or the operation thereof, unless and until there shall first have been obtained from the Commission a certificate that the present or future public convenience and necessity permit of such abandonment.

"(19) The application for and issuance of any such certificate shall be under such rules and regulations as to hearings and other matters as the Commission may from time to time prescribe, and the provisions of this Act shall apply to all such proceedings. Upon receipt of any application for such certificate the Commission shall cause notice thereof to be given to and a copy filed with the governor of each state in which such additional or extended line of railroad is proposed to be constructed or operated, or all or any portion of a line of railroad, or the operation thereof, is proposed to be abandoned, with the right to be heard as herein-after provided with respect to the hearing of complaints or the issuance of securities; and said notice shall also be published for three consecutive weeks in some newspaper of general circulation in each county in or through which said line of railroad is constructed or operates.

"(20) The Commission shall have power to issue such certificate as prayed for, or to refuse to issue it, or to issue it for a portion or portions of a line of railroad, or extension thereof, described in the application, or for the partial exercise only of such right or privilege, and may attach to the issuance of the certificate such terms and conditions as in its judgment the public convenience and necessity may require. From and after issuance of such certificate, and not before, the carrier by railroad may, without securing approval other than such certificate, comply with the terms and conditions contained in or attached to the issuance of such certificate and proceed with the construction, operation, or abandonment covered thereby. Any construction, operation, or abandonment contrary to the provisions of this paragraph or of paragraph (18) or (19) of this section may be enjoined by any court of competent jurisdiction at the suit of the United States, the Commission, any commission or regulating body of the state or states affected, or any party in interest; and any carrier which, or any director, officer, receiver, operating trustee, lessee, agent, or person, acting for or employed by such carrier, who knowingly authorizes, consents to, or permits any violation of this paragraph or of paragraph (18) of this section, shall upon conviction thereof be punished by a fine of not more than \$5,000 or by imprisonment for not more than three years, or both.

"(21) The Commission may, after hearing, in a proceeding upon complaint or upon its own initiative without complaint, authorize or require by order any carrier by railroad subject to this Act, party to such proceeding, to provide itself with safe and adequate facilities for performing as a common carrier its car service as that term is used in this Act, and to extend its line or lines: Provided, That no such authorization or order shall be made unless the Commission finds, as to such extension, that it is reasonably required in the interest of public convenience and necessity, or as to such extension

or facilities that the expense involved therein will not impair the ability of the carrier to perform its duty to the public. Any carrier subject to this Act which refuses or neglects to comply with any order of the Commission made in pursuance of this paragraph shall be liable to a penalty of \$100 for each day during which such refusal or neglect continues, which shall accrue to the United States and may be recovered in a civil action brought by the United States.

"(22) The authority of the Commission conferred by paragraphs (18) to (21), both inclusive, shall not extend to the construction or abandonment of spur, industrial, team, switching or side tracks, located or to be located wholly within one state, or of street, suburban, or interurban electric railways, which are not operated as a part or parts of a general steam railroad system of transportation."

SEC. 403. The fifteenth and sixteenth paragraphs of section 1 of the Interstate Commerce Act, added to such section by the Act entitled "An Act to amend the Act to regulate commerce, as amended, and for other purposes," approved August 10, 1917, are hereby amended by inserting "(23)" at the beginning of such fifteenth paragraph and "(24)" at the beginning of such sixteenth paragraph.

Rebates

SEC. 404. Section 2 of the Interstate Commerce Act is hereby amended to read as follows:

"SEC. 2. That if any common carrier subject to the provisions of this Act shall, directly or indirectly, by any special rate, rebate, drawback, or other device, charge, demand, collect, or receive from any person or persons a greater or less compensation for any service rendered, or to be rendered, in the transportation of passengers or property or the transmission of intelligence, subject to the provisions of this Act, than it charges, demands, collects, or receives from any other person or persons for doing for him or them a like and contemporaneous service in the transportation or transmission of a like kind of traffic or message, under substantially similar circumstances and conditions, such common carrier shall be deemed guilty of unjust discrimination, which is hereby prohibited and declared to be unlawful."

SEC. 405. The first paragraph of section 3 of the Interstate Commerce Act is hereby amended by inserting "(1)" after the section number at the beginning thereof.

Collection of Rates and Charges

Section 3 of the Interstate Commerce Act is hereby amended by adding after the first paragraph a new paragraph to read as follows:

"(2) From and after July 1, 1920, no carrier by railroad subject to the provisions of this Act shall deliver or relinquish possession at destination of any freight transported by it until all tariff rates and charges thereon have been paid, except under such rules and regulations as the Commission may from time to time prescribe to assure prompt payment of all such rates and charges and to prevent unjust discrimination: *Provided*, That the provisions of this paragraph shall not be construed to prohibit any carrier from extending credit in connection with rates and charges on freight transported for the United States, for any department, bureau, or agency thereof, or for any state or territory or political subdivision thereof, or for the District of Columbia."

Interchange of Traffic

The second paragraph of section 3 of the Interstate Commerce Act is hereby amended to read as follows:

"(3) All carriers, engaged in the transportation of passengers or property, subject to the provisions of this Act, shall, according to their respective powers, afford all reasonable, proper, and equal facilities for the interchange of traffic between their respective lines, and for the receiving, forwarding, and delivering of passengers or property to and from their several lines and those connecting therewith, and shall not discriminate in their rates, fares, and charges between such connecting lines, or unduly prejudice any such connecting line in the distribution of traffic that is not specifically routed by the shipper.

"(4) If the Commission finds it to be in the public interest and to be practicable, without substantially impairing the ability of a carrier owning or entitled to the enjoyment of terminal facilities to handle its own business, it shall have power to require the use of any such terminal facilities, including main-line track or

tracks for a reasonable distance outside of such terminal, of any carrier, by another carrier or other carriers, on such terms and for such compensation as the carriers affected may agree upon, or, in the event of a failure to agree, as the Commission may fix as just and reasonable for the use so required, to be ascertained on the principle controlling compensation in condemnation proceedings. Such compensation shall be paid or adequately secured before the enjoyment of the use may be commenced. If under this paragraph the use of such terminal facilities of any carrier is required to be given to another carrier or other carriers, and the carrier whose terminal facilities are required to be so used is not satisfied with the terms fixed for such use, or if the amount of compensation so fixed is not duly and promptly paid, the carrier whose terminal facilities have thus been required to be given to another carrier or other carriers shall be entitled to recover, by suit or action against such other carrier or carriers, proper damages for any injuries sustained by it as the result of compliance with such requirement, or just compensation for such use, or both, as the case may be."

Long and Short Haul

SEC. 406. Section 4 of the Interstate Commerce Act is hereby amended to read as follows:

"SEC. 4. (1) That it shall be unlawful for any common carrier subject to the provisions of this Act to charge or receive any greater compensation in the aggregate for the transportation of passengers, or of like kind of property, for a shorter than for a longer distance over the same line or route in the same direction, the shorter being included within the longer distance, or to charge any greater compensation as a through rate than the aggregate of the intermediate rates subject to the provisions of this Act, but this shall not be construed as authorizing any common carrier within the terms of this Act to charge or receive as great compensation for a shorter as for a longer distance; Provided, That upon application to the Commission such common carrier may in special cases, after investigation, be authorized by the Commission to charge less for longer than for shorter distances for the transportation of passengers or property; and the Commission may from time to time prescribe the extent to which such designated common carrier may be relieved from the operation of this section; but in exercising the authority conferred upon it in this proviso the Commission shall not permit the establishment of any charge to or from the more distant point that is not reasonably compensatory for the service performed; and if a circuitous rail line or route is, because of such circuituity, granted authority to meet the charges of a more direct line or route to or from competitive points and to maintain higher charges to or from intermediate points on its line, the authority shall not include intermediate points as to which the haul of the petitioning line or route is not longer than that of the direct line or route between the competitive points; and no such authorization shall be granted on account of merely potential water competition not actually in existence: And provided further, That rates, fares, or charges existing at the time of the passage of this amendatory Act by virtue of orders of the Commission or as to which application has theretofore been filed with the Commission and not yet acted upon, shall not be required to be changed by reason of the provisions of this section until the further order of or a determination by the Commission.

"(2) Wherever a carrier by railroad shall in competition with a water route or routes reduce the rates on the carriage of any species of freight to or from competitive points it shall not be permitted to increase such rates unless after hearing by the Commission it shall be found that such proposed increased rests upon changed conditions other than the elimination of water competition."

Division of Traffic or Earnings

SEC. 407. The first paragraph of section 5 of the Interstate Commerce Act is hereby amended to read as follows:

"SEC. 5. (1) That, except upon specific approval by order of the Commission as in this section provided, and except as provided in paragraph (16) of section 1 of this Act, it shall be unlawful for any common carrier subject to this Act to enter into any contract, agreement, or combination with any other common carrier or carriers for the pooling of freights of different and competing railroads, or to divide between them the aggregate or net proceeds of the earnings of such railroads, or any portion thereof; and in any case of an agreement for the pooling of

freights as aforesaid each day of its continuance shall be deemed a separate offense: Provided, That whenever the Commission is of opinion, after hearing upon application of any carrier or carriers engaged in the transportation of passengers or property subject to this Act, or upon its own initiative, that the division of their traffic or earnings, to the extent indicated by the Commission, will be in the interest of better service to the public, or economy in operation, and will not unduly restrain competition, the Commission shall have authority by order to approve and authorize, if assented to by all the carriers involved, such division of traffic or earnings, under such rules and regulations, and for such consideration as between such carriers and upon such terms and conditions, as shall be found by the Commission to be just and reasonable in the premises.

Consolidation of Railway Properties

"(2) Whenever the Commission is of opinion, after hearing, upon application of any carrier or carriers engaged in the transportation of passengers or property subject to this Act, that the acquisition, to the extent indicated by the Commission, by one of such carriers of the control of any other such carrier or carriers either under a lease or by the purchase of stock or in any other manner not involving the consolidation of such carriers into a single system for ownership and operation, will be in the public interest, the Commission shall have authority by order to approve and authorize such acquisition, under such rules and regulations and for such consideration and on such terms and conditions as shall be found by the Commission to be just and reasonable in the premises.

"(3) The Commission may from time to time, for good cause shown, make such orders, supplemental to any order made under paragraph (1) or (2), as it may deem necessary or appropriate.

"(4) The Commission shall as soon as practicable prepare and adopt a plan for the consolidation of the railway properties of the continental United States into a limited number of systems. In the division of such railways into such systems under such plan, competition shall be preserved as fully as possible and wherever practicable the existing routes and channels of trade and commerce shall be maintained. Subject to the foregoing requirements, the several systems shall be so arranged that the cost of transportation as between competitive systems and as related to the values of the properties through which the service is rendered shall be the same, so far as practicable, so that these systems can employ uniform rates in the movement of competitive traffic and under efficient management earn substantially the same rate of return upon the value of their respective railway properties.

"(5) When the Commission has agreed upon a tentative plan, it shall give the same due publicity and upon reasonable notice, including notice to the governor of each state, shall hear all persons who may file or present objections thereto. The Commission is authorized to prescribe a procedure for such hearings and to fix a time for bringing them to a close. After the hearings are at an end, the Commission shall adopt a plan for such consolidation and publish the same, but it may at any time thereafter, upon its own motion or upon application, reopen the subject for such changes or modifications as in its judgment will promote the public interest. The consolidations herein provided for shall be in harmony with such plan.

"(6) It shall be lawful for two or more carriers by railroad, subject to this Act, to consolidate their properties or any part thereof, into one corporation for the ownership, management, and operation of the properties theretofore in separate ownership, management, and operation, under the following conditions:

"(a) The proposed consolidation must be in harmony with and in furtherance of the complete plan of consolidation mentioned in paragraph (5) and must be approved by the Commission;

"(b) The bonds at par of the corporation which is to become the owner of the consolidated properties, together with the outstanding capital stock at par of such corporation, shall not exceed the value of the consolidated properties as determined by the Commission. The value of the properties sought to be consolidated shall be ascertained by the Commission under section 19a of this Act, and it shall be the duty of the Commission to proceed immediately to the ascertainment of such value for the properties involved in a proposed consolidation upon the filing of the application for such consolidation.

"(c) Whenever two or more carriers propose a consolidation under this section, they shall present their application therefor to the Commission, and thereupon the Commission shall notify

the governor of each state in which any part of the properties sought to be consolidated is situated and the carriers involved in the proposed consolidation, of the time and place for a public hearing. If after such hearing the Commission finds that the public interest will be promoted by the consolidation and that the conditions of this section have been or will be fulfilled, it may enter an order approving and authorizing such consolidation, with such modifications and upon such terms and conditions as it may prescribe, and thereupon such consolidation may be effected, in accordance with such order, if all the carriers involved assent thereto, the law of any state or the decision or order of any state authority to the contrary notwithstanding.

(7) The power and authority of the Commission to approve and authorize the consolidation of two or more carriers shall extend and apply to the consolidation of four express companies into the American Railway Express Company, a Delaware corporation, if application for such approval and authority is made to the Commission within thirty days after the passage of this amendatory Act; and pending the decision of the Commission such consolidation shall not be dissolved.

(8) The carriers affected by any order made under the foregoing provisions of this section and any corporation organized to effect a consolidation approved and authorized in such order shall be, and they are hereby, relieved from the operation of the 'antitrust laws,' as designated in section 1 of the Act entitled 'An Act to supplement existing laws against unlawful restraints and monopolies, and for other purposes,' approved October 15, 1914, and of all other restraints or prohibitions by law, state or federal, in so far as may be necessary to enable them to do anything authorized or required by any order made under and pursuant to the foregoing provisions of this section."

Sec. 408. The paragraph of section 5 of the Interstate Commerce Act, added to such section by section 11 of the Act entitled "An Act to provide for the opening, maintenance, protection, and operation of the Panama Canal and the sanitation and government of the Canal Zone," approved August 24, 1912, is hereby amended by inserting "(9)" at the beginning thereof.

The two paragraphs of section 11 of such Act of August 24, 1912, which follow the paragraph added by such section to section 5 of the Interstate Commerce Act, are hereby made a part of section 5 of the Interstate Commerce Act. The first paragraph so made a part of section 5 of the Interstate Commerce Act is hereby amended by inserting "(10)" at the beginning thereof, and the second such paragraph is hereby amended by inserting "(11)" at the beginning thereof.

Sec. 409. Section 6 of the Interstate Commerce Act is hereby amended by inserting "(1)" after the section number at the beginning of the first paragraph, "(2)" at the beginning of the second paragraph, "(3)" at the beginning of the third paragraph, "(4)" at the beginning of the fourth paragraph, "(5)" at the beginning of the fifth paragraph, "(6)" at the beginning of the sixth paragraph, "(7)" at the beginning of the seventh paragraph, "(8)" at the beginning of the eighth paragraph, "(9)" at the beginning of the ninth paragraph, "(10)" at the beginning of the tenth paragraph, "(11)" at the beginning of the eleventh paragraph, "(12)" at the beginning of the twelfth paragraph, and "(13)" at the beginning of the thirteenth paragraph.

Sec. 410. The third paragraph of section 6 of the Interstate Commerce Act is hereby amended by striking out the period at the end thereof and inserting in lieu thereof a colon and the following: "Provided further, That the Commission is hereby authorized to make suitable rules and regulations for the simplification of schedules of rates, fares, charges, and classifications and to permit in such rules and regulations the filing of an amendment of or change in any rate, fare, charge, or classification without filing complete schedules covering rates, fares, charges or classifications not changed if, in its judgment, not inconsistent with the public interest."

Sec. 411. The seventh paragraph of section 6 of the Interstate Commerce Act is hereby amended by striking out the proviso at the end.

Sec. 412. The two paragraphs under (a) of the thirteenth paragraph of section 6 of the Interstate Commerce Act are hereby amended so as to be combined into one paragraph to read as follows:

(a) To establish physical connection between the lines of the rail carrier and the dock at which interchange of passengers or property is to be made by directing the rail carrier to make suitable connection between its line and a track or tracks which have been constructed from the dock to the limits of

the railroad right of way, or by directing either or both the rail and water carrier, individually or in connection with one another, to construct and connect with the lines of the rail carrier a track or tracks to the dock. The Commission shall have full authority to determine and prescribe the terms and conditions upon which these connecting tracks shall be operated, and it may, either in the construction or the operation of such tracks, determine what sum shall be paid to or by either carrier: Provided, That construction required by the Commission under the provisions of this paragraph shall be subject to the same restrictions as to findings of public convenience and necessity and other matters as is construction required under section 1 of this Act."

Sec. 413. Paragraph (c) of the thirteenth paragraph of section 6 of the Interstate Commerce Act is hereby amended to read as follows:

"(c) To establish proportional rates, or maximum, or minimum, or maximum and minimum proportional rates, by rail to and from the ports to which the traffic is brought, or from which it is taken by the water carrier, and to determine to what traffic and in connection with what vessels and upon what terms and conditions such rates shall apply. By proportional rates are meant those which differ from the corresponding local rates to and from the port and which apply only to traffic which has been brought to the port or is carried from the port by a common carrier by water."

Sec. 414. Section 10 of the Interstate Commerce Act is hereby amended by inserting "(1)" after the section number at the beginning of the first paragraph, "(2)" at the beginning of the second paragraph, "(3)" at the beginning of the third paragraph, and "(4)" at the beginning of the fourth paragraph, and by inserting after the words "transportation of passengers or property," in the proviso in the first paragraph thereof, the words "or the transmission of intelligence."

Sec. 415. Section 12 of the Interstate Commerce Act is hereby amended by inserting "(1)" after the section number at the beginning of the first paragraph, "(2)" at the beginning of the second paragraph, "(3)" at the beginning of the third paragraph, "(4)" at the beginning of the fourth paragraph, "(5)" at the beginning of the fifth paragraph, "(6)" at the beginning of the sixth paragraph, and "(7)" at the beginning of the seventh paragraph.

Sec. 416. Section 13 of the Interstate Commerce Act is hereby amended by inserting "(1)" after the section number at the beginning of the first paragraph and "(2)" at the beginning of the second paragraph, and by adding at the end thereof two new paragraphs to read as follows:

"(3) Whenever in any investigation under the provisions of this Act, or in any investigation instituted upon petition of the carrier concerned, which petition is hereby authorized to be filed, there shall be brought in issue any rate, fare, charge, classification, regulation, or practice, made or imposed by authority of any state, or initiated by the President during the period of federal control, the Commission, before proceeding to hear and dispose of such issue, shall cause the state or states interested to be notified of the proceeding. The Commission may confer with the authorities of any state having regulatory jurisdiction over the class of persons and corporations subject to this Act with respect to the relationship between rate structures and practices of carriers subject to the jurisdiction of such state bodies and of the Commission; and to that end is authorized and empowered, under rules to be prescribed by it, and which may be modified from time to time, to hold joint hearings with any such state regulating bodies or any matters wherein the Commission is empowered to act and where the rate-making authority of a state is or may be affected by the action taken by the Commission. The Commission is also authorized to avail itself of the cooperation, services, records, and facilities of such state authorities in the enforcement of any provision of this Act.

"(4) Whenever in any such investigation the Commission, after full hearing, finds that any such rate, fare, charge, classification, regulation, or practice causes any undue or unreasonable advantage, preference or prejudice as between persons or localities in intrastate commerce on the one hand and interstate or foreign commerce on the other hand or any undue, unreasonable, or unjust discrimination against interstate or foreign commerce, which is hereby forbidden and declared to be unlawful, it shall prescribe the rate, fare, or charge, or the maximum or minimum, or maximum and minimum,

thereafter to be charged, and the classification, regulation, or practice thereafter to be observed, in such manner as, in its judgment, will remove such advantage, preference, prejudice, or discrimination. Such rates, fares, charges, classifications, regulations, and practices shall be observed while in effect by the carriers parties to such proceeding affected thereby, the law of any state or the decision or order of any state authority to the contrary notwithstanding.

SEC. 417. Section 14 of the Interstate Commerce Act is hereby amended by inserting "(1)" after the section number at the beginning of the first paragraph, "(2)" at the beginning of the second paragraph, and "(3)" at the beginning of the third paragraph.

Regulation of Rates

SEC. 418. The first four paragraphs of section 15 of the Interstate Commerce Act are hereby amended to read as follows:

"SEC. 15. (1) That whenever, after full hearing, upon a complaint made as provided in section 13 of this Act, or after full hearing under an order for investigation and hearing made by the Commission on its own initiative, either in extension of any pending complaint or without any complaint whatever, the Commission shall be of opinion that any individual or joint rate, fare, or charge whatsoever demanded, charged, or collected by any common carrier or carriers subject to this Act for the transportation of persons or property or for the transmission of messages as defined in the first section of this Act, or that any individual or joint classification, regulation, or practice whatsoever of such carrier or carriers subject to the provisions of this Act, is or will be unjust or unreasonable or unjustly discriminatory or unduly preferential or prejudicial, or otherwise in violation of any of the provisions of this Act, the Commission is hereby authorized and empowered to determine and prescribe what will be the just and reasonable individual or joint rate, fare, or charge, or rates, fares, or charges, to be thereafter observed in such case, or the maximum or minimum, or maximum and minimum, to be charged (or, in the case of a through route where one of the carriers is a water line, the maximum rates, fares, and charges applicable thereto), and what individual or joint classification, regulation, or practice is or will be just, fair, and reasonable, to be thereafter followed, and to make an order that the carrier or carriers shall cease and desist from such violation to the extent to which the Commission finds that the same does or will exist, and shall not thereafter publish, demand, or collect any rate, fare, or charge for such transportation or transmission other than the rate, fare, or charge so prescribed, or in excess of the maximum or less than the minimum so prescribed, as the case may be, and shall adopt the classification and shall conform to and observe the regulation or practice so prescribed.

"(2) Except as otherwise provided in this Act, all orders of the Commission, other than orders for the payment of money, shall take effect within such reasonable time, not less than thirty days, and shall continue in force until its further order, or for a specified period of time, according as shall be prescribed in the order, unless the same shall be suspended or modified or set aside by the Commission, or be suspended or set aside by a court of competent jurisdiction.

"(3) The Commission may, and it shall whenever deemed by it to be necessary or desirable in the public interest, after full hearing upon complaint or upon its own initiative without a complaint, establish through routes, joint classifications, and joint rates, fares, or charges, applicable to the transportation of passengers or property, or the maxima or minima or maxima and minima, to be charged (or, in the case of a through route where one of the carriers is a water line, the maximum rates, fares, and charges applicable thereto), and the divisions of such rates, fares, or charges as hereinafter provided, and the terms and conditions under which such through routes shall be operated; and this provision, except as herein otherwise provided, shall apply when one of the carriers is a water line. The Commission shall not, however, establish any through route, classification, or practice, or any rate, fare, or charge, between street electric passenger railways not engaged in the general business of transporting freight in addition to their passenger and express business, and railroads of a different character; nor shall the Commission have the right to establish any route, classification, or practice, or any rate, fare, or charge when the transportation is wholly by water, and any transportation by water

affected by this Act shall be subject to the laws and regulations applicable to transportation by water.

"(4) In establishing any such through route the Commission shall not (except as provided in section 3, and except where one of the carriers is a water line), require any carrier by railroad, without its consent, to embrace in such route substantially less than the entire length of its railroad and of any intermediate railroad operated in conjunction and under a common management or control therewith, which lies between the termini of such proposed through route, unless such inclusion of lines would make the through route unreasonably long as compared with another practicable through route which could otherwise be established: Provided, That in time of shortage of equipment, congestion of traffic, or other emergency declared by the Commission it may (either upon complaint or upon its own initiative without complaint, at once, if it so orders without answer or other formal pleadings by the interested carrier or carriers, and with or without notice, hearing, or the making or filing of a report, according as the Commission may determine) establish temporarily such through routes as in its opinion are necessary or desirable in the public interest.

"(5) Transportation wholly by railroad of ordinary livestock in car-load lots destined to or received at public stockyards shall include all necessary service of unloading and reloading en route, delivery at public stockyards of inbound shipments into suitable pens, and receipt and loading at such yards of outbound shipments, without extra charge therefor to the shipper, consignee or owner, except in cases where the unloading or reloading en route is at the request of the shipper, consignee or owner, or to try an intermediate market, or to comply with quarantine regulations. The Commission may prescribe or approve just and reasonable rules governing each of such excepted services. Nothing in this paragraph shall be construed to affect the duties and liabilities of the carriers now existing by virtue of law respecting the transportation of other than ordinary livestock, or the duty of performing service as to shipments other than those to or from public stockyards.

"(6) Whenever, after full hearing upon complaint or upon its own initiative, the Commission is of opinion that the divisions of joint rates, fares, or charges, applicable to the transportation of passengers or property, are or will be unjust, unreasonable, inequitable, or unduly preferential or prejudicial as between the carriers parties thereto (whether agreed upon by such carriers, or any of them, or otherwise established), the Commission shall by order prescribe the just, reasonable, and equitable divisions thereof to be received by the several carriers, and in cases where the joint rate, fare, or charge was established pursuant to a finding or order of the Commission and the divisions thereof are found by it to have been unjust, unreasonable, or inequitable, or unduly preferential or prejudicial, the Commission may also by order determine what (for the period subsequent to the filing of the complaint or petition or the making of the order of investigation) would have been the just, reasonable, and equitable divisions thereof to be received by the several carriers, and require adjustment to be made in accordance therewith. In so prescribing and determining the divisions of joint rates, fares and charges, the Commission shall give due consideration, among other things, to the efficiency with which the carriers concerned are operated, the amount of revenue required to pay their respective operating expenses, taxes, and a fair return on their railway property held for and used in the service of transportation, and the importance to the public of the transportation services of such carriers; and also whether any particular participating carrier is an originating, intermediate, or delivering line, and any other fact or circumstance which would ordinarily, without regard to the mileage haul, entitle one carrier to a greater or less proportion than another carrier of the joint rate, fare or charge.

"(7) Whenever there shall be filed with the Commission any schedule stating a new individual or joint rate, fare, or charge, or any new individual or joint classification, or any new individual or joint regulation or practice affecting any rate, fare, or charge, the Commission shall have, and it is hereby given, authority, either upon complaint or upon its own initiative without complaint, at once, and if it so orders without answer or other formal pleading by the interested carrier or carriers, but upon reasonable notice, to enter upon a hearing concerning the lawfulness of such rate, fare, charge, classification, regulation, or

practice; and pending such hearing and the decision thereon the Commission, upon filing with such schedule and delivering to the carrier or carriers affected thereby a statement in writing of its reasons for such suspension, may suspend the operation of such schedule and defer the use of such rate, fare, charge, classification, regulation, or practice, but not for a longer period than one hundred and twenty days beyond the time when it would otherwise go into effect; and after full hearing, whether completed before or after the rate, fare, charge, classification, regulation, or practice goes into effect, the Commission may make such order with reference thereto as would be proper in a proceeding initiated after it had become effective. If any such hearing can not be concluded within the period of suspension, as above stated, the Commission may extend the time of suspension for a further period not exceeding thirty days, and if the proceeding has not been concluded and an order made at the expiration of such thirty days, the proposed change of rate, fare, charge, classification, regulation, or practice shall go into effect at the end of such period, but, in case of a proposed increased rate or charge for or in respect to the transportation of property, the Commission may by order require the interested carrier or carriers to keep accurate account in detail of all amounts received by reason of such increase, specifying by whom and in whose behalf such amounts are paid, and upon completion of the hearing and decision may by further order require the interested carrier or carriers to refund, with interest, to the persons in whose behalf such amounts were paid such portion of such increased rates or charges as by its decision shall be found not justified. At any hearing involving a rate, fare, or charge increased after January 1, 1910, or of a rate, fare, or charge sought to be increased after the passage of this Act, the burden of proof to show that the increased rate, fare, or charge, or proposed increased rate, fare, or charge, is just and reasonable shall be upon the carrier, and the Commission shall give to the hearing and decision of such questions preference over all other questions pending before it and decide the same as speedily as possible."

SEC. 419. The fifth paragraph of section 15 of the Interstate Commerce Act is hereby amended by inserting "(8)" at the beginning of such paragraph.

SEC. 420. Section 15 of the Interstate Commerce Act is hereby amended by inserting after the fifth paragraph two new paragraphs, to read as follows:

"(9) Whenever property is diverted or delivered by one carrier to another carrier contrary to routing instructions in the bill of lading, unless such diversion or delivery is in compliance with a lawful order, rule, or regulation of the Commission, such carriers shall, in a suit or action in any court of competent jurisdiction, be jointly and severally liable to the carrier thus deprived of its right to participate in the haul of the property, for the total amount of the rate or charge it would have received had it participated in the haul of the property. The carrier to which the property is thus diverted shall not be liable in such suit or action if it can show, the burden of proof being upon it, that before carrying the property it had no notice, by bill of lading, waybill or otherwise, of the routing instructions. In any judgment which may be rendered the plaintiff shall be allowed to recover against the defendant a reasonable attorney's fee to be taxed in the case.

"(10) With respect to traffic not routed by the shipper, the Commission may, whenever the public interest and a fair distribution of the traffic require, direct the route which such traffic shall take after it arrives at the terminus of one carrier or at a junction point with another carrier, and is to be there delivered to another carrier."

SEC. 421. Section 15 of the Interstate Commerce Act is hereby further amended by inserting "(11)" at the beginning of the sixth paragraph, "(12)" at the beginning of the seventh paragraph, "(13)" at the beginning of the eighth paragraph, and "(14)" at the beginning of the ninth paragraph.

SEC. 422. The Interstate Commerce Act is further amended by inserting after section 15 a new section to be known as section 15a and to read as follows:

"**Sec. 15a.** (1) When used in this section the term "rates" mean rates, fares, and charges, and all classifications, regulations, and practices, relating thereto; the term "carrier" means a carrier by railroad or partly by railroad and partly by water, within the continental United States, subject to this Act, excluding (a) sleeping car companies and express companies (b) street or suburban electric railways unless operated as a part of a general

steam railroad system of transportation, (c) interurban electric railways unless operated as a part of a general steam railroad system of transportation or engaged in the general transportation of freight, and (d) any belt-line railroad, terminal switching railroad, or other terminal facility, owned exclusively and maintained, operated, and controlled by any State or political subdivision thereof; and the term "net railway operating income" means railway operating income, including in the computation thereof debits and credits arising from equipment rents and joint facility rents.

"(2) In the exercise of its power to prescribe just and reasonable rates the Commission shall initiate, modify, establish or adjust such rates so that carriers as a whole (or as a whole in each of such rate groups or territories as the Commission may from time to time designate) will, under honest, efficient and economical management and reasonable expenditures for maintenance of way, structures and equipment, earn an aggregate annual net railway operating income equal, as nearly as may be, to a fair return upon the aggregate value of the railway property of such carriers held for and used in the service of transportation: Provided, That the Commission shall have reasonable latitude to modify or adjust any particular rate which it may find to be unjust or unreasonable, and to prescribe different rates for different sections of the country.

"(3) The Commission shall from time to time determine and make public what percentage of such aggregate property value constitutes a fair return thereon, and such percentage shall be uniform for all rate groups or territories which may be designated by the Commission. In making such determination it shall give due consideration, among other things, to the transportation needs of the country and the necessity (under honest, efficient and economical management of existing transportation facilities) of enlarging such facilities in order to provide the people of the United States with adequate transportation: Provided, That during the two years beginning March 1, 1920, the Commission shall take as such fair return a sum equal to 5½ per centum of such aggregate value, but may, in its discretion, add thereto a sum not exceeding one-half of one per centum of such aggregate value to make provision in whole or in part for improvements, betterments or equipment, which, according to the accounting system prescribed by the Commission, are chargeable to capital account.

"(4) For the purposes of this section, such aggregate value of the property of the carriers shall be determined by the Commission from time to time and as often as may be necessary. The Commission may utilize the results of its investigation under section 19a of this Act, in so far as deemed by it available, and shall give due consideration to all the elements of value recognized by the law of the land for rate-making purposes, and shall give to the property investment account of the carriers only that consideration which under such law it is entitled to in establishing values for rate-making purposes. Whenever pursuant to section 19a of this Act the value of the railway property of any carrier held for and used in the service of transportation has been finally ascertained, the value so ascertained shall be deemed by the Commission to be the value thereof for the purpose of determining such aggregate value.

"(5) Inasmuch as it is impossible (without regulation and control in the interest of the commerce of the United States considered as a whole) to establish uniform rates upon competitive traffic which will adequately sustain all the carriers which are engaged in such traffic and which are indispensable to the communities to which they render the service of transportation, without enabling some of such carriers to receive a net railway operating income substantially and unreasonably in excess of a fair return upon the value of their railway property held for and used in the service of transportation, it is hereby declared that any carrier which receives such an income so in excess of a fair return, shall hold such part of the excess, as hereinafter prescribed, as trustee for, and shall pay it to, the United States.

Disposal of Net Operating Income in Excess of 6 Per Cent

"(6) If, under the provisions of this section, any carrier receives for any year a net railway operating income in excess of 6 per centum of the value of the railway property held for and used by it in the service of transportation, one-half of such excess shall be placed in a reserve fund established and main-

tained by such carrier, and the remaining one-half thereof shall, within the first four months following the close of the period for which such computation is made, be recoverable by and paid to the Commission for the purpose of establishing and maintaining a general railroad contingent fund as hereinafter described. For the purpose of this paragraph the value of the railway property and the net railway operating income of a group of carriers, which the Commission finds are under common control and management and are operated as a single system, shall be computed for the system as a whole irrespective of the separate ownership and accounting returns of the various parts of such system. In the case of any carrier which has accepted the provisions of section 209 of this amendatory Act the provisions of this paragraph shall not be applicable to the income for any period prior to September 1, 1920. The value of such railway property shall be determined by the Commission in the manner provided in paragraph (4).

"(7) For the purpose of paying dividends or interest on its stocks, bonds or other securities, or rent for leased roads, a carrier may draw from the reserve fund established and maintained by it under the provisions of this section to the extent that its net railway operating income for any year is less than a sum equal to .6 per centum of the value of the railway property held for and used by it in the service of transportation, determined as provided in paragraph (6); but such fund shall not be drawn upon for any other purpose.

"(8) Such reserve fund need not be accumulated and maintained by any carrier beyond a sum equal to 5 per centum of the value of its railway property determined as herein provided, and when such fund is so accumulated and maintained the portion of its excess income which the carrier is permitted to retain under paragraph (6) may be used by it for any lawful purpose.

"(9) The Commission shall prescribe rules and regulations for the determination and recovery of the excess income payable to it under this section, and may require such security and prescribe such reasonable terms and conditions in connection therewith as it may find necessary. The Commission shall make proper adjustments to provide for the computation of excess income for a portion of a year, and for a year in which a change in the percentage constituting a fair return or in the value of a carrier's railway property becomes effective.

"(10) The general railroad contingent fund so to be recoverable by and paid to the Commission and all accretions thereof shall be a revolving fund and shall be administered by the Commission. It shall be used by the Commission in furtherance of the public interest in railway transportation either by making loans to carriers to meet expenditures for capital account or to refund maturing securities originally issued for capital account, or by purchasing transportation equipment and facilities and leasing the same to carriers, as hereinafter provided. Any moneys in the fund not so employed shall be invested in obligations of the United States or deposited in authorized depositories of the United States subject to the rules promulgated from time to time by the secretary of the treasury relating to government deposits.

"(11) A carrier may at any time make application to the Commission for a loan from the general railroad contingent fund, setting forth the amount of the loan and the term for which it is desired, the purpose of the loan and the uses to which it will be applied, the present and prospective ability of the applicant to repay the loan and meet the requirements of its obligations in that regard, the character and value of the security offered, and the extent to which the public convenience and necessity will be served. The application shall be accompanied by statements showing such facts and details as the Commission may require with respect to the physical situation, ownership, capitalization, indebtedness, contract obligations, operation, and earning power of the applicant, together with such other facts relating to the propriety and expediency of granting the loan applied for and the ability of the applicant to make good the obligation, as the Commission may deem pertinent to the inquiry.

"(12) If the Commission, after such hearing and investigation, with or without notice, as it may direct, finds that the making, in whole or in part, of the proposed loan from the general railroad contingent fund is necessary to enable the applicant property to meet the transportation needs of the public, and that the prospective earning power of the applicant and the character and value of the security offered are such as to fur-

nish reasonable assurance of the applicant's ability to repay the loan within the time fixed therefor, and to meet its other obligations in connection with such loan, the Commission may make a loan to the applicant from such railroad contingent fund, in such amount, for such length of time, and under such terms and conditions as it may deem proper. The Commission shall also prescribe the security to be furnished, which shall be adequate to secure the loan. All such loans shall bear interest at the rate of 6 per centum per annum, payable semiannually to the Commission. Such loans when repaid, and all interest paid thereon, shall be placed in the general railroad contingent fund.

"(13) A carrier may at any time make application to the Commission for the lease to it of transportation equipment or facilities, purchased from the general railroad contingent fund, setting forth the kind and amount of such equipment or facilities and the term for which it is desired to be leased, the uses to which it is proposed to put such equipment or facilities, the present and prospective ability of the applicant to pay the rental charges thereon and to meet the requirements of its obligations under the lease, and the extent to which the public convenience and necessity will be served. The application shall be accompanied by statements showing such facts and details as the Commission may require with respect to the physical situation, ownership, capitalization, indebtedness, contract obligations, operation, and earning power of the applicant, together with such other facts relating to the propriety and expediency of leasing such equipment or facilities to the applicant as the Commission may deem pertinent to the inquiry.

"(14) If the Commission, after such hearing and investigation, with or without notice, as it may direct, finds that the leasing to the applicant of such equipment or facilities, in whole or in part, is necessary to enable the applicant properly to meet the transportation needs of the public, and that the prospective earning power of the applicant is such as to furnish reasonable assurance of the applicant's ability to pay promptly the rental charges and meet its other obligations under such lease, the Commission may lease such equipment or facilities purchased by it from the general railroad contingent fund, to the applicant for such length of time, and under such terms and conditions as it may deem proper. The rental charges provided in every such lease shall be at least sufficient to pay a return of 6 per centum per annum, plus allowance for depreciation determined as provided in paragraph (5) of section 20 of this Act, upon the value of the equipment or facilities leased thereunder. All rental charges and other payments received by the Commission in connection with such equipment and facilities, including amounts received under any sale thereof, shall be placed in the general railroad contingent fund.

"(15) The Commission may from time to time purchase, contract for the construction, repair and replacement of, and sell, equipment and facilities, and enter into and carry out contracts and other obligations in connection therewith, to the extent that moneys included in the general railroad contingent fund are available therefor, and in so far as necessary to enable it to secure and supply equipment and facilities to carriers whose applications therefor are approved under the provisions of this section, and to maintain and dispose of such equipment and facilities.

"(16) The Commission may from time to time prescribe such rules and regulations as it deems necessary to carry out the provisions of this section respecting the making of loans and the lease of equipment and facilities.

"(17) The provisions of this section shall not be construed as depriving shippers of their right to reparation in case of overcharges, unlawfully excessive or discriminatory rates, or rates excessive in their relation to other rates, but no shipper shall be entitled to recover upon the sole ground that any particular rate may reflect a proportion of excess earnings to be paid by the carrier to the Commission in the public interest under the provisions of this section.

"(18) Any carrier, or any corporation organized to construct and operate a railroad, proposing to undertake the construction and operation of a new line of railroad may apply to the Commission for permission to retain for a period not to exceed ten years all or any part of its earnings derived from such new construction in excess of the amount heretofore in this section provided, for such disposition as it may lawfully make of the same, and the Commission may, in its discretion, grant such permission; conditioned, however, upon the completion of the

work of construction within a period to be designated by the Commission in its order granting such permission."

SEC. 423. The first paragraph of section 16 of the Interstate Commerce Act is hereby amended by inserting "(1)" after the section number at the beginning of such paragraph.

SEC. 424. The second paragraph of section 16 of the Interstate Commerce Act is hereby amended by inserting "(2)" at the beginning of such paragraph, and by striking out the last sentence thereof and inserting in lieu thereof the following as a new paragraph:

"(3) All actions at law by carriers subject to this Act for recovery of their charges, or any part thereof, shall be begun within three years from the time the cause of action accrues, and not after. All complaints for the recovery of damages shall be filed with the Commission within two years from the time the cause of action accrues, and not after, unless the carrier, after the expiration of such two years or within ninety days before such expiration, begins an action for recovery of charges in respect of the same service, in which case such period of two years shall be extended to and including ninety days from the time such action by the carrier is begun. In either case the cause of action in respect of a shipment of property shall, for the purposes of this section, be deemed to accrue upon delivery or tender of delivery thereof by the carrier, and not after. A petition for the enforcement of an order for the payment of money shall be filed in the district court or State court within one year from the date of the order, and not after."

SEC. 425. The third, fourth, fifth, and sixth paragraphs of section 16 of the Interstate Commerce Act are hereby amended by inserting "(4)" at the beginning of the third paragraph, "(5)" at the beginning of the fourth paragraph, "(6)" at the beginning of the fifth paragraph, and "(7)" at the beginning of the sixth paragraph.

SEC. 426. The seventh paragraph of section 16 of the Interstate Commerce Act is hereby amended to read as follows:

"(8) Any carrier, any officer, representative, or agent of a carrier, or any receiver, trustee, lessee, or agent of either of them, who knowingly fails or neglects to obey any order made under the provisions of sections 3, 13, or 15 of this Act shall forfeit to the United States the sum of \$5,000 for each offense. Every distinct violation shall be a separate offense, and in case of a continuing violation each day shall be deemed a separate offense."

SEC. 427. The eighth and ninth paragraphs of section 16 of the Interstate Commerce Act are hereby amended by inserting "(9)" at the beginning of the eighth paragraph and "(10)" at the beginning of the ninth paragraph.

SEC. 428. The tenth paragraph of section 16 of the Interstate Commerce Act is hereby amended to read as follows:

"(11) The Commission may employ such attorneys as it finds necessary for proper legal aid and service of the Commission or its members in the conduct of their work, or for proper representation of the public interests in investigations made by it or cases or proceedings pending before it, whether at the Commission's own instance or upon complaint, or to appear for or represent the Commission in any case in court; and the expenses of such employment shall be paid out of the appropriation for the Commission."

Sec. 429. The eleventh and twelfth paragraphs of section 16 of the Interstate Commerce Act are hereby amended by inserting "(12)" at the beginning of the eleventh paragraph and "(13)" at the beginning of the twelfth paragraph.

Sec. 430. Section 17 of the Interstate Commerce Act is hereby amended by inserting "(1)" after the section number at the beginning of the first paragraph.

Sec. 431. The second paragraph of section 17 of the Interstate Commerce Act is hereby amended to read as follows:

"(2) The Commission is hereby authorized by its order to divide the members thereof into as many divisions (each to consist of not less than three members) as it may deem necessary, which may be changed from time to time. Such divisions shall be denominated, respectively, division one, division two, and so forth. Any commissioner may be assigned to and may serve upon such division or divisions as the Commission may direct, and the senior in service of the commissioners constituting any of said divisions shall act as chairman thereof. In case of vacancy in any division, or of absence or inability to serve thereon of any commissioner thereto assigned, the chairman of the Commission or any

commissioner designated by him for that purpose, may temporarily serve on said division until the Commission shall otherwise order."

Sec. 432. The third and fourth paragraphs of section 17 of the Interstate Commerce Act are hereby amended by inserting "(3)" at the beginning of the third paragraph, and "(4)" at the beginning of the fourth paragraph.

The fifth and sixth paragraphs of such section are hereby repealed.

The seventh paragraph of such section is hereby amended by inserting "(5)" at the beginning of such paragraph.

Sec. 433. Section 18 of the Interstate Commerce Act is hereby amended by inserting "(1)" after the section number at the beginning of the first paragraph, and "(2)" at the beginning of the second paragraph.

Section 19a of the Interstate Commerce Act is hereby amended by inserting "(a)" after the section number at the beginning of the first paragraph, "(b)" at the beginning of the second paragraph, "(c)" at the beginning of the seventh paragraph, "(d)" at the beginning of the eighth paragraph, "(e)" at the beginning of the ninth paragraph, "(f)" at the beginning of the tenth paragraph, "(g)" at the beginning of the eleventh paragraph, "(h)" at the beginning of the twelfth paragraph, "(i)" at the beginning of the thirteenth paragraph, "(j)" at the beginning of the fourteenth paragraph, "(k)" at the beginning of the fifteenth paragraph, and "(l)" at the beginning of the sixteenth paragraph.

Sec. 434. Section 20 of the Interstate Commerce Act is hereby amended by inserting "(1)" after the section number at the beginning of the first paragraph, "(2)" at the beginning of the second paragraph, "(3)" at the beginning of the third paragraph, and "(4)" at the beginning of the fourth paragraph.

Carrier's Accounts and Records

Sec. 435. The fifth paragraph of section 20 of the Interstate Commerce Act is hereby amended to read as follows:

"(5) The Commission may, in its discretion, prescribe the forms of any and all accounts, records, and memoranda to be kept by carriers subject to the provisions of this Act, including the accounts, records, and memoranda of the movement of traffic, as well as of the receipts and expenditures of moneys. The Commission shall, as soon as practicable, prescribe, for carriers subject to this Act, the classes of property for which depreciation charges may properly be included under operating expenses, and the percentages of depreciation which shall be charged with respect to each of such classes of property, classifying the carriers as it may deem proper for this purpose. The Commission may, when it deems necessary, modify the classes and percentages so prescribed. The carriers subject to this Act shall not charge to operating expenses any depreciation charges on classes of property other than those prescribed by the Commission, or charge with respect to any class of property a percentage of depreciation other than that prescribed therefor by the Commission. No such carrier shall in any case include in any form under its operating or other expenses any depreciation or other charge or expenditure included elsewhere as a depreciation charge or otherwise under its operating or other expenses. The Commission shall at all times have access to all accounts, records, and memoranda, including all documents, papers, and correspondence now or hereafter existing, and kept or required to be kept by carriers subject to this Act, and the provisions of this section respecting the preservation and destruction of books, papers, and documents shall apply thereto, and it shall be unlawful for such carriers to keep any other accounts, records, or memoranda than those prescribed or approved by the Commission, and it may employ special agents or examiners, who shall have authority under the order of the Commission to inspect and examine any and all accounts, records, and memoranda, including all documents, papers, and correspondence now or hereafter existing, and kept or required to be kept by such carriers. This provision shall apply to receivers of carriers and operating trustees. The provisions of this section shall also apply to all accounts, records, and memoranda, including all documents, papers, and correspondence now or hereafter existing, kept during the period of Federal control, and

placed by the President in the custody of carriers subject to this Act."

Sec. 436. The sixth paragraph of section 20 of the Interstate Commerce Act is hereby amended by inserting "(6)" at the beginning of such paragraph.

The seventh paragraph of section 20 of the Interstate Commerce Act is hereby amended by striking out "Par. 7," at the beginning of such paragraph and inserting "(7)" in lieu thereof.

The eighth to twelfth paragraphs, inclusive, of section 20 of the Interstate Commerce Act are hereby amended by inserting "(8)" at the beginning of the eighth paragraph, "(9)" at the beginning of the ninth paragraph, "(10)" at the beginning of the tenth paragraph, "(11)" at the beginning of the eleventh paragraph, and "(12)" at the beginning of the twelfth paragraph.

Sec. 437. The eleventh paragraph of section 20 of the Interstate Commerce Act is hereby amended by inserting immediately before the first proviso thereof the following:

"Provided, That if the loss, damage, or injury occurs while the property is in the custody of a carrier by water the liability of such carrier shall be determined by and under the laws and regulations applicable to transportation by water, and the liability of the initial carrier shall be the same as that of such carrier by water."

Sec. 438. The third proviso of the eleventh paragraph of section 20 of the Interstate Commerce Act (not counting the proviso added by section 437 of this Act) is hereby amended to read as follows:

"Provided further, That it shall be unlawful for any such common carrier to provide by rule, contract, regulation, or otherwise a shorter period for giving notice of claims than ninety days, for the filing of claims than four months, and for the institution of suits than two years, such period for institution of suits to be computed from the day when notice in writing is given by the carrier to the claimant that the carrier has disallowed the claim or any part or parts thereof specified in the notice."

Regulation of Securities

Sec. 439. The Interstate Commerce Act is further amended by inserting therein a new section between section 20 and section 21, to be designated section 20a, and to read as follows:

"SEC. 20a. (1) That as used in this section the term 'carrier' means a common carrier by railroad (except a street, suburban, or interurban electric railway which is not operated as a part of a general steam railroad system of transportation) which is subject to this Act, or any corporation organized for the purpose of engaging in transportation by railroad subject to this Act.

"(2) From and after one hundred and twenty days after this section takes effect it shall be unlawful for any carrier to issue any share of capital stock or any bond or other evidence of interest in or indebtedness of the carrier (hereinafter in this section collectively termed 'securities') or to assume any obligation or liability as lessor, lessee, guarantor, indorser, surety, or otherwise, in respect of the securities of any other person, natural or artificial, even though permitted by the authority creating the carrier corporation, unless and until, and then only to the extent that, upon application by the carrier, and after investigation by the Commission of the purposes and uses of the proposed issue and the proceeds thereof, or of the proposed assumption of obligation or liability in respect of the securities of any other person, natural or artificial, the Commission by order authorizes such issue or assumption. The Commission shall make such order only if it finds that such issue or assumption: (a) is for some lawful object within its corporate purposes, and compatible with the public interest, which is necessary or appropriate for or consistent with the proper performance by the carrier of service to the public as a common carrier, and which will not impair its ability to perform that service, and (b) is reasonably necessary and appropriate for such purpose.

"(3) The Commission shall have power by its order to grant or deny the application as made, or to grant it in part and deny it in part, or to grant it with such modifications and upon such terms and conditions as the Commission may deem necessary, or appropriate in the premises, and may from time to time, for good cause shown, make such supplemental orders in the premises as it may deem necessary or appropriate, and

may by any such supplemental order modify the provisions of any previous order as to the particular purposes, uses, and extent to which, or the conditions under which, any securities so theretofore authorized or the proceeds thereof may be applied, subject always to the requirements of the foregoing paragraph (2).

"(4) Every application for authority shall be made in such form and contain such matters as the Commission may prescribe. Every such application, as also every certificate of notification hereinafter provided for, shall be made under oath, signed and filed on behalf of the carrier by its president, a vice-president, auditor, comptroller, or other executive officer having knowledge of the matters therein set forth and duly designated for that purpose by the carrier.

"(5) Whenever any securities set forth and described in any application for authority or certificate of notification as pledged or held unencumbered in the treasury of the carrier shall, subsequent to the filing of such application or certificate, be sold, pledged, repledged, or otherwise disposed of by the carrier, such carrier shall, within ten days after such sale, pledge, repledge, or other disposition, file with the Commission a certificate of notification to that effect, setting forth therein all such facts as may be required by the Commission.

"(6) Upon receipt of any such application for authority the Commission shall cause notice thereof to be given to and a copy filed with the governor of each state in which the applicant carrier operates. The railroad commissions, public service or utilities commissions, or other appropriate state authorities of the state shall have the right to make before the Commission such representations as they may deem just and proper for preserving and conserving the rights and interests of their people and the states, respectively, involved in such proceeding. The Commission may hold hearings, if it sees fit, to enable it to determine its decision upon the application for authority.

"(7) The jurisdiction conferred upon the Commission by this section shall be exclusive and plenary, and a carrier may issue securities and assume obligations or liabilities in accordance with the provisions of this section without securing approval other than as specified herein.

"(8) Nothing herein shall be construed to imply any guaranty or obligation as to such securities on the part of the United States.

"(9) The foregoing provisions of this section shall not apply to notes to be issued by the carrier maturing not more than two years after the date thereof and aggregating (together with all other then outstanding notes of a maturity of two years or less) not more than 5 per centum of the par value of the securities of the carrier then outstanding. In the case of securities having no par value, the par value for the purposes of this paragraph shall be the fair market value as of the date of issue. Within ten days after the making of such notes the carrier issuing the same shall file with the Commission a certificate of notification, in such form as may from time to time be determined and prescribed by the Commission, setting forth as nearly as may be the same matters as those required in respect of applications for authority to issue other securities: *Provided*, That in any subsequent funding of such notes the provisions of this section respecting other securities shall apply.

"(10) The Commission shall require periodical or special reports from each carrier hereafter issuing any securities, including such notes, which shall show, in such detail as the Commission may require, the disposition made of such securities and the application of the proceeds thereof.

"(11) Any security issued or any obligation or liability assumed by a carrier, for which under the provisions of this section the authorization of the Commission is required, shall be void, if issued or assumed without such authorization therefor having first been obtained, or if issued or assumed contrary to any term or condition of such order of authorization as modified by any order supplemental thereto entered prior to such issuance or assumption; but no security issued or obligation or liability assumed in accordance with all the terms and conditions of such an order of authorization therefor as modified by any order supplemental thereto entered prior to such issuance or assumption, shall be rendered void because of failure to comply with any provision of this section relating to procedure and other matters preceding the entry of such order of authorization. If any security so made void or any security in respect to which the assumption of obligation or liability is so made void, is

acquired by any person for value and in good faith and without notice that the issue or assumption is void, such person may in a suit or action in any court of competent jurisdiction hold jointly and severally liable for the full amount of the damage sustained by him in respect thereof, the carrier which issued the security so made void, or assumed the obligation or liability so made void, and its directors, officers, attorneys, and other agents, who participated in any way in the authorizing, issuing, hypothecating, or selling of the security so made void or in the authorizing of the assumption of the obligation or liability so made void. In case any security so made void was directly acquired from the carrier issuing it the holder may at his option rescind the transaction and upon the surrender of the security recover the consideration given therefor. Any director, officer, attorney, or agent of the carrier who knowingly assents to or concurs in any issue of securities or assumptions of obligation or liability forbidden by this section, or any sale or other disposition of securities contrary to the provisions of the Commission's order or orders in the premises, or any application not authorized by the Commission of the funds derived by the carrier through such sale or other disposition of such securities, shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than \$1,000 nor more than \$10,000, or by imprisonment for not less than one year nor more than three years, or by both such fine and imprisonment, in the discretion of the court.

"(12) After December 31, 1921, it shall be unlawful for any person to hold the position of officer or director of more than one carrier, unless such holding shall have been authorized by order of the Commission, upon due showing, in form and manner prescribed by the Commission, that neither public nor private interests will be adversely affected thereby. After this section takes effect it shall be unlawful for any officer or director of any carrier to receive for his own benefit, directly or indirectly, any money or thing of value in respect of the negotiation, hypothecation, or sale of any securities issued or to be issued by such carrier, or to share in any of the proceeds thereof, or to participate in the making or paying of any dividends of an operating carrier from any funds properly included in capital account. Any violation of these provisions shall be a misdemeanor, and on conviction in any United States court having jurisdiction shall be punished by a fine of not less than \$1,000 nor more than \$10,000, or by imprisonment for not less than one year nor more than three years, or by both, such fine and imprisonment in the discretion of the court."

Interstate Commerce Commission Enlarged

SEC. 440. Section 24 of the Interstate Commerce Act is hereby amended to read as follows:

"SEC. 24. That the Commission is hereby enlarged so as to consist of eleven members, with terms of seven years, and each shall receive \$12,000 compensation annually. The qualifications of the members and the manner of payment of their salaries shall be as already provided by law. Such enlargement of the Commission shall be accomplished through appointment by the President, by and with the advice and consent of the Senate, of two additional Interstate Commerce Commissioners, one for a term expiring December 31, 1923, and one for a term expiring December 31, 1924. The terms of the present commissioners, or of any successor appointed to fill a vacancy caused by the death or resignation of any of the present commissioners, shall expire as heretofore provided by law. Their successors and the successors of the additional commissioners herein provided for shall be appointed for the full term of seven years, except that any person appointed to fill a vacancy shall be appointed only for the unexpired term of the commissioner whom he shall succeed. Not more than six commissioners shall be appointed from the same political party. Hereafter the salary of the secretary of the Commission shall be \$7,500 a year."

Relations Between Rail and Water Carriers

SEC. 441. The Interstate Commerce Act is hereby further amended by adding at the end thereof three new sections, to read as follows:

"SEC. 25 (1). That every common carrier by water in foreign commerce, whose vessels are registered under the laws of the United States, shall file with the Commission, within thirty days after this section becomes effective and regularly thereafter as changes are made, a schedule or schedules showing for each

of its steam vessels intended to load general cargo at ports in the United States for foreign destinations (a) the ports of loading, (b) the dates upon which such vessels will commence to receive freight and dates of sailing, (c) the route and itinerary such vessels will follow and the ports of call for which cargo will be carried.

"(2) Upon application of any shipper a carrier by railroad shall make request for, and the carrier by water shall upon receipt of such request name, a specific rate applying for such sailing, and upon such commodity as shall be embraced in the inquiry, and shall name in connection with such rate, port charges, if any, which accrue in addition to the vessel's rates and are not otherwise published by the railway as in addition to or absorbed in the railway rate. Vessel rates, if conditioned upon quantity of shipment, must be so stated and separate rates may be provided for carload and less than carload shipments. The carrier by water, upon advices from a carrier by railroad, stating that the quoted rate is firmly accepted as applying upon a specifically named quantity of any commodity, shall, subject to such conditions as the Commission by regulation may prescribe, make firm reservation from unsold space in such steam vessel as shall be required for its transportation and shall so advise the carrier by railroad, in which advices shall be included the latest available information as to prospective sailing date of such vessel.

"(3) As the matters so required to be stated in such schedule or schedules are changed or modified from time to time, the carrier shall file with the Commission such changes or modifications as early as practicable after such modification is ascertained. The Commission is authorized to make and publish regulations not inconsistent herewith governing the manner and form in which such carriers are to comply with the foregoing provisions. The Commission shall cause to be published in compact form, for the information of shippers of commodities throughout the country, the substance of such schedules, and furnish such publications to all railway carriers subject to this Act, in such quantities that railway carriers may supply to each of their agents who receive commodities for shipment in such cities and towns as may be specified by the Commission, a copy of said publication; the intent being that each shipping community sufficiently important, from the standpoint of the export trade, to be so specified by the Commission shall have opportunity to know the sailings and routes, and to ascertain the transportation charges of such vessels engaged in foreign commerce. Each railway carrier to which such publication is furnished by the Commission is hereby required to distribute the same as aforesaid and to maintain such publication as it is issued from time to time, in the hands of its agents. The Commission is authorized to make such rules and regulations not inconsistent herewith respecting the distribution and maintenance of such publications in the several communities so specified as will further the intent of this section.

"(4) When any consignor delivers a shipment of property to any of the places so specified by the Commission, to be delivered by a railway carrier to one of the vessels upon which space has been reserved at a specified rate previously ascertained, as provided herein, for the transportation by water from and for a port named in the aforesaid schedule, the railway carrier shall issue a through bill of lading to the point of destination. Such bill of lading shall name separately the charge to be paid for the railway transportation, water transportation, and port charges if any, not included in the rail or water transportation charge; but the carrier by railroad shall not be liable to the consignor, consignee, or other person interested in the shipment after its delivery to the vessel. The Commission shall, in such manner as will preserve for the carrier by water the protection of limited liability provided by law, make such rules and regulations not inconsistent herewith as will prescribe the form of such through bill of lading. In all such cases it shall be the duty of the carrier by railroad to deliver such shipment to the vessel as a part of its undertaking as a common carrier.

"(5) The issuance of a through bill of lading covering shipments provided for herein shall not be held to constitute 'an arrangement for continuous carriage or shipment' within the meaning of this Act.

Automatic Train Stops

"SEC. 26. That the Commission may, after investigation, order any carrier by railroad subject to this Act, within a time specified in the order, to install automatic train-stop or train-control

devices or other safety devices, which comply with specifications and requirements prescribed by the Commission, upon the whole or any part of its railroad, such order to be issued and published at least two years before the date specified for its fulfillment: *Provided*, That a carrier shall not be held to be negligent because of its failure to install such devices upon a portion of its railroad not included in the order; and any action arising because of an accident happening upon such portion of its railroad shall be determined without consideration of the use of such devices upon another portion of its railroad. Any common carrier which refuses or neglects to comply with any order of the Commission made under the authority conferred by this section shall be liable to a penalty of \$100 for each day that such refusal or neglect continues, which shall accrue to the United States, and may be recovered in a civil action brought by the United States.

"Sec. 27. That this Act may be cited as the 'Interstate Commerce Act.'"

Title V.—Miscellaneous Provisions

SEC. 500. It is hereby declared to be the policy of Congress to promote, encourage, and develop water transportation, service, and facilities in connection with the commerce of the United States, and to foster and preserve in full vigor both rail and water transportation.

It shall be the duty of the secretary of war, with the object of promoting, encouraging, and developing inland waterway transportation facilities in connection with the commerce of the United States, to investigate the appropriate types of boats suitable for different classes of such waterways; to investigate the subject of water terminals, both for inland waterway traffic and for through traffic by water and rail, including the necessary docks, warehouses, apparatus, equipment, and appliances in connection therewith, and also railroad spurs and switches connecting with such terminals, with a view to devising the types most appropriate for different locations, and for the more expeditious and economical transfer or interchange of passengers or property between carriers by water and carriers by rail; to advise with communities, cities, and towns regarding the appropriate location of such terminals, and to cooperate with them in the preparation of plans for suitable terminal facilities; to investigate the existing status of water transportation upon the different inland waterways of the country, with a view to determining whether such waterways are being utilized to the extent of their capacity, and to what extent they are meeting the demands of traffic, and whether the water carriers utilizing such waterways are interchanging traffic with the railroads; and to investigate any other matter that may tend to promote and encourage inland water transportation. It shall also be the province and duty of the secretary of war to compile, publish, and distribute, from time to time, such useful statistics, data, and information concerning transportation on inland waterways as he may deem to be of value to the commercial interest of the country.

The words "inland waterway" as used in this section shall be construed to include the Great Lakes.

SEC. 501. The effective date on and after which the provisions of section 10 of the Act entitled "An Act to supplement existing laws against unlawful restraints and monopolies, and for other purposes," approved October 15, 1914, shall become and be effective is hereby deferred and extended to January 1, 1921: *Provided*, That such extension shall not apply in the case of any corporation organized after January 12, 1918.

SEC. 502. That if any clause, sentence, paragraph, or part of this Act shall for any reason to be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the remainder of the Act, but shall be confined in its operation to the clause, sentence, paragraph, or part thereof directly involved in the controversy in which such judgment has been rendered.

MORGANTOWN & KINGWOOD.—This railroad has been sold to the Bethlehem Steel Corporation and the Baltimore & Ohio Railroad. The road operates between Morgantown, W. Va., and Richard, 49 miles.

Weekly Traffic Report

ACCORDING TO A REPORT on traffic conditions for the week ended February 5, 1920, made to Director General Hines, revenue freight loaded and freight received from connections for the various regions as compared with the same week in 1919 were as follows:

Eastern region—Revenue freight loaded, 186,030, an increase of 11,306 cars; receipts from connections, 220,293, an increase of 16,927. Allegheny region—Revenue freight loaded, 179,725, an increase of 18,633 cars; receipts from connections, 142,567, an increase of 7,854 cars. Pocahontas region—Revenue freight loaded, 30,715, an increase of 2,257 cars; receipts from connections, 16,155, a decrease of 426 cars. Southern region—Revenue freight loaded, 123,951, an increase of 16,736 cars; receipts from connections, 72,799, an increase of 12,065 cars. Northwestern region—Revenue freight loaded, 115,372, an increase of 17,196 cars; receipts from connections, 78,354, an increase of 16,169 cars. Central Western region—Revenue freight loaded, 118,995, an increase of 20,412 cars; receipts from connections, 68,812, an increase of 10,562 cars. Southwestern region—Revenue freight loaded, 61,474, an increase of 7,682 cars; receipts from connections, 95,076, an increase of 8,198 cars over last year.

A summary of the report follows:

Eastern Region: (Week ended February 7). Freight traffic has been very much interfered with, particularly in the vicinity of New York, Boston and Portland, by the heavy storms which began on the night of February 4 and almost completely stopped the movement of freight. The worst congestion of freight is at and in the vicinity of Toledo where there were 8,664 carloads on hand February 7, compared with 6,385 awaiting movement February 1. The only other congestions are at Detroit with the exception of those mentioned above. There was considerable reduction in the movement of passengers due to weather interference.

Allegheny Region: (Week ended February 6). Operating conditions are much affected by severe weather. Practically no floating was done in New York harbor for several days and barge movement between Norfolk and Cape Charles was entirely at a standstill for several days. Embargoes have been extended to cover the New York situation resulting therefrom. Anthracite coal loading protected and represents slight increase. Coal dumped at tidewater decreased 36,356 tons. Travel has been normal and conditions at ticket windows, parcel rooms and baggage rooms are very good.

Pocahontas Region: (Week ended February 6). With the exception of tidewater coal dumped, business as a whole shows some improvement over previous week.

Southern Region: (Week ended February 5). An increase in commercial activities throughout the region with encouraging prospects for the future is reported. Continued heavy movement of cotton to the ports largely in excess of last year. Principal lines report continued heavy travel throughout the region. No trouble being experienced in furnishing equipment to take care of travel.

Northwestern Region: (Week ended February 6). General business conditions continue good. All industries are very active with many plans in contemplation for future expansion. Wholesalers and manufacturers are unable to fill all orders received while dealers are willing to contract for supplies as far in the future as manufacturers are willing to accept. Total loading of lumber and forest products for the week was 19,522 cars, representing the best showing made in some time. Volume of passenger travel very satisfactory but local travel has suffered a slight decrease on account of influenza epidemic. Through travel slightly ahead of last year.

Central Western Region: (Week ended February 6). Coal production for the week was 30 per cent greater than

during same period last year and approximately same as previous week; however, mines are working more nearly on full time. Report of foreign trade through Los Angeles harbor for the year 1919 shows exports and imports to have been 100 per cent greater than any previous year. Passenger travel continues to show increases over corresponding period of last year, but several lines report that a recurrence of the influenza epidemic is having some effect on movement.

Southwestern Region: (Week ended February 5). Crop conditions; in Texas the season is backward and very little progress has been made in preparation for Spring crops. Wheat that has been sown is in fair condition only. Too much rain has interfered with all farm operations. North of Texas conditions are similar except that considerable winter plowing has been done in Oklahoma. Influenza epidemic affected regular passenger travel to some extent during the week, although the volume of traffic generally showed no decided fluctuation.

Annual Report of Regional Director Maher

OPERATION OF RAILROADS in the Pocahontas region during 1919 was adversely affected by the efforts of the roads to serve the public interest in handling the coal strike situation according to the annual report of Regional Director N. D. Maher submitted to Director General Walker D. Hines. The report set forth however that the coal output secured by the steps taken by the railroads compensated for the loss in economical operation involved.

"As in other regions" the report said, "The country-wide coal miners' strike has adversely affected our operation. Although the coal tonnage handled by the roads of this region since November 1, on the average has approximated that of October just prior to mine suspension, miscellaneous traffic has had to be severely sacrificed in order to devote the entire westbound freight capacity of the Norfolk & Western and Chesapeake & Ohio to the movement of coal to the west through Ohio gateways. The loss of this miscellaneous traffic will be added to; owing to the unusual routes traveled by emergency coal to connecting regions. Attendant difficulties in maintaining car supply at the mines, because of lack of road capacity for handling empties from the west through Cincinnati and Columbus, Ohio, sufficient to supply both the western and eastern mines of the two railroads, entail much special service in the eastern sections in order to move the mines promptly the empty cars made available there from unusual sources and over high cost operation routes. I am glad to say, however, that the accomplishment in production at the mines in this region and the forwarding of coal to outlying territory in satisfying quantities may be regarded compensatory in the circumstances."

The causes of increased expenses as compared with revenues were outlined as follows:

"Increases in prices paid for material.

"Increase in wage costs.

"Progressive heavy decrease in traffic following January 1 and impracticability of immediately reducing forces in the same ratio.

"Maintenance of way and maintenance of equipment work deferred in 1918 on account of the shortage of materials and labor and performed in 1919.

"Disorganization and loss of revenue incident to the shopmen's strike in June and August, and similar losses due to coal miners' strike in November and December.

"Back pay earned in 1918 and paid in 1919, which was approximately \$1,500,000.

"From the standpoint of earnings and relative expense of transportation, the tides of freight traffic in 1919 were not

as favorable in 1919 as in 1918. This applies particularly to falling off of traffic destined to the seaboard."

The report gave in detail the figures showing the decrease in freight traffic on the Pocahontas region lines. These included;

Decrease of 142,721 cars of coal and coke loaded.

Decrease of 3,085 cars of ore reflecting depression in the iron and steel industry during the first half of the year particularly.

Decrease of 166,344 cars in loads received from connections.

"In connection with the fluctuation in the volume of coal traffic" the report said, "it should be stated that the roads of this region, which are particularly equipped for the handling of coal to tidewater, suffered a material decline in this traffic during the early part of the year, due to several causes, namely, (1) Coal requirements in New England hitherto drawn from Hampton Roads were taken care of to an unusual extent with coal moving all rail from more northern fields, because of the unfavorable differential in transportation charges resulting from high vessel rates applying from Hampton Roads and elsewhere, (2) Vessels for foreign tonnage were scarce and rates of freight practically prohibitive. With more plentiful vessel supply and active demand for foreign tonnage in recent months, the tidewater coal traffic increased immensely and was going along in heavy volume when suspended, or curtailed by reason of the strike of coal miners.

"Export freight through Hampton Roads ports decreased materially with the ending of the war, so that in 1919 the tonnage, other than coal, through these ports during the first ten months amounted to only approximately 700,000 tons, which was considerably less than one-half the tonnage of freight other than coal exported through Hampton Roads ports in 1918, when a large tonnage of war material and supplies for the United States army overseas was handled."

Passenger revenues on all lines in the region showed a material increase during the year, according to the report, which said:

"In 1918 after the armistice in November, and in 1919, passenger train service aggregating 197,113 miles per annum, formerly operated, and discontinued during the war, was restored. Also additional train service totalling 336,250 miles per annum has been inaugurated, and the train service now performed is reasonably sufficient for the needs of the public.—In August it was necessary to discontinue a number of main and branch line trains on the C. & O. railroad for some days owing to the shopmen's strike. Full service, however, was re-established as promptly as conditions permitted.

"There was also curtailment of passenger service for a few days in December in order to conserve coal."

The report indicated a general improvement in the reduction of the number of freight claims against roads in the Pocahontas region and set forth the progress made in safety work by the lines during the year.

Work on additions and betterments, the report said, was restricted by the inability of the railroads to finance these improvements.

"THE RAILROADS NEED THREE BILLIONS NOW and as much more within three years to prevent hardening of the arteries and inability to circulate the nation's commerce," Frank A. Vanderlip told a gathering of farmers at Cornell University on February 13. He maintains that unless the transportation systems can obtain the necessary capital from the people's savings they will have to be returned to government control. Shorter hours for labor," he continued, "might be viewed with equanimity if the leisure time were used by workers to study. If the leisure is to be used for pleasure and amusement then we shall have less of everything."

Railway Freight Rates Increased in Great Britain

Deficit of £50,000,000 to Be Met by Flat Rate Additions and Percentage Increases to Existing Rates

By Robert E. Thayer
European Editor of the *Railway Age*.

LONDON.

IN VIEW OF THE MANY difficulties experienced in the past by the railways of the United States in obtaining an increase in railway rates to meet increased costs of operation, the manner in which the English railways have accomplished this end will not only be read with a great deal of interest but with a feeling somewhat akin to envy. As a matter of fact, there was nothing to it. There is no real story to tell how it was done—it was simply done—and that is all there is to it. The Minister of Transport, soon after he was given control of the railways and had appointed his Rate Advisory Committee, under the terms of the Ministry of Transport Act, told that committee to provide an increase in railway freight rates which would provide an additional revenue of £50,000,000 with which to meet the estimated deficit, stating that the need was urgent for an immediate rate adjustment.

The Rates Advisory Committee is composed of representatives of trade and agriculture, who were selected by the Board of Trade; a representative of labor, by the Minister of Labor; a representative of transportation, selected by the Minister of Transport; a man selected by the Lord Chancellor, and a railway economist selected by the Minister of Transport. Soon after it had been formed, the committee called into conference other representatives of the shippers, agricultural interests and labor. It conferred with representatives of the Mining Association appointed for the purpose, representatives from chambers of commerce of the important cities in Great Britain and of important commercial organizations, such as the British Federation of Industries and the Iron and Steel Federation, representatives from the Central Chamber of Agriculture, the National Association of Corn and Agricultural Merchants, National Farmers' Union, etc., and the representatives of the Coal industry, all of which were appointed for the specific purpose of conferring with and advising the committee. Although representatives of railway labor were invited for conference none attended. It will be observed that there were no state commissions involved, as Great Britain is not blessed with such organizations.

Inasmuch as the committee had conferences with these chosen representatives of the trade interests, it did not deem it necessary to hold public inquiry regarding the matter. In this regard it is to be stated that although some very large increases in the rates were adopted there has been practically no criticism, and the press has accepted these increases almost without a murmur. At a recent meeting of the associations of British Chambers of Commerce, however, some dissatisfaction was shown with the way the matter was handled, and motions were proposed that the government be asked to defer putting the rates into effect until they had been more thoroughly discussed by the shippers, but inasmuch as, as the president of the association said, such action was virtually calling into question the action of the association's representatives on the rate committee these motions were quashed.

The easy manner in which these increases in rates were put into effect is a fine commentary on the way in which the whole matter was handled. The entire public had been fully informed as to the extent of the losses of the government through the guaranteed dividends to the railroads, and they were quite ready to approve of anything that would

make good this deficit. Furthermore, there is not nearly the antipathy to the railroads in Great Britain as in the United States. Perhaps the reason for this is that the railways' business in Great Britain has not been everybody's business anywhere near to the extent that it has in the United States. There never has been the publicity given to railway statistics and methods of operation here as in the states. The general public knows, comparatively speaking, nothing of the inner workings of the roads here. There has been no Brandeis to proclaim in such formidable language of "disgraceful inefficiency" in railway operation. Thus we see the income of Great Britain's railways increased by about £50,000,000, or approximately 25 per cent, with no more difficulty than the necessary work of putting the increase into effect.

Reasons for Percentage and Flat Rate Increases

The Rates Advisory Committee, realizing that the demand for increased revenue was urgent, had come to the conclusion that time would not be allowed for the detailed consideration of the very large number of separate charges or the general revision of the classifications in effect. It, therefore, advised an interim revision based on certain flat rate and percentage increases, with the idea of giving more elaborate consideration to the general principles of governing railway rates later on, when a more constructive and scientific work could be done.

Appreciating the fact that the increases in the cost of railway operation falls more heavily on the short-distance traffic than upon long-distance traffic, and that the latter is more remunerative to the railway companies than the former, the committee decided that to adopt a percentage increase only would put upon the long-distance traffic a disproportionate share of the increased cost of shunting, handling and cartage, seeing that the long-distance traffic carries higher actual rates. It was decided that flat rates of small amount should be imposed in addition to a percentage increase (which will have the effect of increasing short-distance rates in a greater proportion than long-distance rates) and that in addition an extra charge should be made upon rates which include collection and delivery, deeming this right in consequence of the very great increase which has taken place in the expense of cartage.

It was the opinion of the committee that the higher classes of goods should in fairness bear both a higher flat rate and a higher percentage of increase than the lower classes of goods. As an instance, it was pointed out that the value of iron ore carried at Class A* rates often does not exceed 10s a ton, while the value of cotton carried at Class 1 rates is at present £200 per ton.

Increases Recommended

The increases recommended by the committee, and which were placed in effect on January 15, are as follows:

(1) The rates and charges in respect of merchandise com-

*The different classifications mentioned in this report are, in general, as follows:

Class A—Heavy raw materials, such as ore, coal, etc.

Class B—Raw materials of higher grade, such as bricks.

Class C—Semi-finish materials, such as iron and steel castings, girders, armor and boiler plate, all grain and certain vegetables.

Classes 1 to 5—Finished articles, groceries, machinery, cloth, hardware, etc.

prised in Class A as regards coal, coke and patent fuel, by 25 per cent, and as regards other goods and minerals in Class A by 30 per cent, together in each case with a flat rate addition of 3d per ton, irrespective of distance, but so that the minimum addition under both heads be not less than 6d per ton and the maximum addition be not more than 2s per ton.

(2) The rates and charges in respect of merchandise comprised in Class B by 40 per cent, together with a flat rate addition of 3d per ton, irrespective of distance, but so that the minimum addition under both heads be not less than 6d and the maximum addition be not more than 3s per ton, but with the further addition for cartage in case of collection and delivery hereinafter mentioned.

(3) The rates and charges in respect of merchandise comprised in Class C by 50 per cent, together with a flat rate addition of 6d per ton, irrespective of distance, and with the further addition for cartage in case of collection and delivery hereinafter mentioned.

(4) The rates and charges in respect of merchandise comprised in Classes 1 to 5 by 60 per cent, with a flat rate addition of 1s per ton, irrespective of distance, and with the further addition for cartage in case of collection and delivery hereinafter mentioned.

We also advise and recommend that where the rates and charges include collection and delivery or collection or delivery the respective percentage increases and flat rate additions should be made upon the whole of the rate or charge, but in addition thereto, there should be charged a further amount of 1s 6d in the case of collection only, or of delivery only, and of 3s per ton in the case of collection and delivery, but that the rebates allowed in cases where a rate includes collection and, or, delivery, but such collection or delivery is not in fact effected by the railway company should be equitably readjusted.

We further advise and recommend, in regard to the rates and charges at present in force.

(5) That the charge for rolling stock as set out in the General Railway Classification be increased by 60 per cent.

(6) That the rates and charges for live stock conveyed by goods train at rates "per truck" should be increased by 60 per cent, together with a flat rate addition of 1s per truck or part truck, irrespective of distance.

(7) That the rates and charges for live stock conveyed by goods train at "head" rates should be increased by 60 per cent in the case of horses, mules, asses, cattle, calves, sheep, lambs, pigs, goats and all other live animals.

(8) That the charges for the use of trucks provided by the railway companies for the conveyance of merchandise, when the provision of trucks is not included in the rate charged for conveyance, should be increased by 50 per cent, but so that the minimum total charge be not less than 9d per ton.

(9) That the rates and charges for the conveyance by goods train of carriages of every description included in the carriage class in the General Railway Classification (not being a carriage adapted and used for traveling on the railway) and for vans and caravans should be increased by 60 per cent, with a flat rate addition in the case of vans and caravans, irrespective of distance, 2s 6d per vehicle.

(10) That the rates and charges for the conveyance of "small parcels by merchandise train" (this corresponds to express service in the United States) as defined by Part VI of the Railway Rates and Charges Order Confirmation Acts, 1891 and 1892, be increased to such an extent that the rates chargeable shall be 100 per cent greater than the rates now charged under the general Railway Classification of Goods "Scale of Charges for Small Parcels by Merchandise Trains," but in other respects remain subject to the provisions of the said Part VI.

(11) That the rates and charges for the conveyance whether by goods train or passenger train of "returned empties" be increased by 100 per cent with the provision that where the "returned empties" are sent in consignments amounting to a truck load, the increase shall be only 50 per cent when consigned from one consignor to one consignee.

(12) That the present rates and charges for parcels and goods by passenger train, including perishable merchandise of the nature specified in Part V of the Railway Rates and Charges Order Confirmation Acts, 1891 and 1892, be increased by 50 per cent, subject to the exceptions and qualifications hereinafter mentioned, and that the charges for cloak room services for parcels be increased so that the minimum charge be 2d.

(13) That the arrangements with the postmaster-general for the division of the receipts for goods sent by parcel post be so modified that the railway companies receive 55 per cent of the total of such receipts, including the increased receipts under the revised rates for parcel post adopted in 1915. If necessary, legislative authority should be obtained to modify the provisions of Section 2, Sub-section 2 of the Post Office and Telegraph Act, 1915, which excludes from the operation of the Post Office Parcel Act, 1882, any increase in the rates of postage for parcels made after the passing of the Act of 1915.

(14) That the contracts with the post office for the conveyance of mails should be revised so that the charges made by the railway companies should be increased by 60 per cent. The recommendations numbered 13 and 14 may no doubt make necessary certain readjustments of postal rates by the postmaster-general which may require parliamentary sanction, and it may be necessary to delay carrying them into effect until these are made.

(15) That any rates and charges for the conveyance of goods or merchandise whether by goods train or passenger train not included in the foregoing recommendations should be increased by 60 per cent.

(16) In regard to the rates and charges for the conveyance of the goods and merchandise hereinafter mentioned, notwithstanding anything contained in the foregoing recommendations, we advise:—

- (a) That no increase be made on the rates and charges in respect of manure in bulk or packed manure, basic slag or lime for agricultural purposes.
- (b) That the rates and charges for the conveyance by passenger train of fruit, vegetables, eggs, butter, cream, soft cheese and poultry, but not including hot house produce, be increased by 25 per cent only.
- (c) That the rates and charges for the conveyance by goods train of potatoes in Class C, vegetables and roots in Class C, fruit, and hay and straw, in lots of two tons and upwards, be increased by 25 per cent only, plus the flat rate and cartage charges above recommended, the rates and charges for consignments of less than two tons being increased in the manner hereinbefore recommended for the respective classes in which they fall.
- (d) That no increase be made in the rates and charges in respect of milk.

To give an idea of how these flat rate additions to the percentage increases affect the lower rate charges, and likewise the short-distance traffic, the following table has been prepared showing the percentage increases to existing rates of varying amounts, as given in the rate book:

Rates in Rate Book (Shillings)	Class A (Increased by 30 per cent plus a flat rate of 3d)	Class B (Increased by 40 per cent plus a flat rate of 3d)	Class C (Increased by 50 per cent plus a flat rate of 6d)	Classes 1 to 5 (Increased by 60 per cent plus a flat rate of 1s)
	(per cent)	(per cent)	(per cent)	(per cent)
1.....	58	66	100	158
2.....	42	54	75	108
3.....	39	47	66	94
4.....	35	46	62	85
5.....	35	45	60	80
.....
10.....	20	30	55	70
20.....	10	15	53	65
30.....	7	10	52	63
40.....	5	7.5	51	63
50.....	4	6	51	62
.....
100.....	2	3	50.5	61

Note: In addition to the above increases there is an additional charge of 1s 6d per ton for collection or delivery.

The increase in revenue to be derived from the new rates is distributed roughly as follows: Class A, 2 per cent; Class B, 4 per cent; Class C, 18 per cent; Classes 1 to 15, 41 per cent; coal, coke and patent fuel (excluding locomotive coal), 17 per cent; freight by passenger train, 8.9 per cent; Irish traffic not previously considered, 3 per cent; small parcels not previously considered, 3 per cent; and mails, 1.5 per cent.

The attention of the committee was called to the importance of not making any recommendations which would prejudicially affect agriculture and the supply of home-grown food, and it gave careful attention to this problem, taking counsel with the representatives of that industry. The diffi-

culties of making recommendations on this point were great, seeing that very few articles are solely used by farmers and agriculturists, and that even agricultural produce at an early stage becomes an ordinary article of commerce in which the trader rather than the farmer is interested. The committee, however, made certain recommendations as to modification in regard to increase in the case of traffic in which the agriculturist is specially interested. One of the many difficulties by which it was faced was the fact that almost all forms of agricultural produce are imported as well as home grown, and that it is well nigh impossible to distinguish in the matter of rates on the ground of the place of origin of the goods carried.

During the war land under cultivation suffered heavily from the shortage of fertilizers and manures, and for that reason no increases were made on this material.

Goods by Passenger Train

The problem of the increases to be made in the rates for the carriage of goods by passenger train differs somewhat from that as to merchandise by goods train. Already in the years 1916, 1918 and 1919 increases had been made in some of the rates as follows:

	On an Average,
1. In the general parcels scale.....	20 per cent in 1918.
2. In the owner's risk scale of rates.....	24 per cent in 1918.
3. On sewing machines, bicycles, bath chairs, etc.	53 per cent in 1919.
4. On caravans	45 per cent in 1919.
5. On bullion and specie	80 per cent in 1919.
6. On carriages	80 per cent in 1919.
7. On motor cars.....	60 per cent in 1919.
8. On motor cycles, motor tricycles.....	33 1/3 per cent in 1919.
9. On horses and mules.....	25 per cent in 1916.
10. On live stock in guard's van.....	20 per cent in 1919.
11. In cartage charges on S. to S traffic.....	33 1/3 per cent in 1919.

Of the traffic by passenger train the great bulk falls under five heads:—

1 and 2. General parcels and owner's risk rates	55 per cent of total.
3. Milk	7 1/2 per cent of total.
4. Perishable goods exceptional and special rates	27 per cent of total.
5. Newspapers	5 per cent of total.

94 1/2 per cent

The committee considered whether the increase in these rates should be based upon the existing rates (*i. e.*, after the increases made since the commencement of the war) or upon the rates in force before those increases were made. It found that those increases had removed many anomalies and that to return to pre-war rates as the basis of increase would restore such anomalies, and thus the committee recommended that the increases should be made upon the rates now in force, but should be at a lower rate than it would have recommended had the increase been based on pre-war rates.

Insofar as it can be determined, the increase in the rates for goods by passenger train will be sufficient to prevent the transfer of traffic from goods trains to passenger trains.

Sir Eric Geddes Comments on the Rates

Shortly after the rates were placed into effect Sir Eric Geddes, the Minister of Transport, commented on them at a dinner given at the Cambridge Chamber of Commerce. In speaking of the necessity for the increase, he stated that whereas the pre-war wage bill of the railways was £47,000,000, the new permanent adjustments which had recently been granted, together with other adjustments, including the increased wages and shorter hours that have been granted, increased the cost of the labor bill to £63,000,000, or 134 per cent. He said: "As the cost of living falls and economies (in railway operation) are effected and we get unified control and improved conditions, you may look for reduced rates and fares. If the railways are prudently managed and trade continues to improve, you may look to a reduction on the present high rates that have been imposed of necessity."

AMERICANIZATION CLASSES have been started at the Schenectady plant of the American Locomotive Works under the direction of George Buys.

Annual Report, Division of Purchases

MORE THAN A BILLION DOLLARS was spent through the Division of Purchases of the United States Railroad Administration during the first 10 months of 1919 in obtaining materials for the railroads under government control, according to the report of Director Henry B. Spencer of the division to Director General Hines. The report listed the value of material bought for the railroads as follows:

Fuel	\$403,815,632
Rail	60,764,970
Cross ties	108,232,363
Other material	568,119,009
Total	\$1,140,931,974

"The needs of various railroads for material to the value of nearly \$19,000,000," the report continued, "have been supplied by the transfer of the material from other railroads having excessive stocks, and the money actually spent has been thereby reduced by that amount. Scrap material to the value of more than \$47,000,000 has been disposed of during the 10 months. The excessive stocks of material held by the railroads as a result of war conditions have been reduced by about \$54,000,000 during the six months following April 1, 1919, when the stocks had reached their highest point, and a still further decrease of approximately \$35,000,000 is anticipated by the end of the year.

"Practically with the beginning of the year the War Industries Board and the Fuel Administration suspended their control of prices and the allocation of the various products, the result of which was an immediate increase in the cost of some commodities, notably forest products, and a moderate decrease in the cost of fuel and steel products.

"Entirely new and different problems were presented by the termination of hostilities late in the preceding year," the report said. "Efforts were directed to the curtailing of purchases wherever it could be done without working hardship or injury to the manufacturing interests whose war-time programs had been completely upset and to the reduction of the abnormally large stocks of material which had been accumulated by the railroads as a war-time necessity. No new equipment was purchased by the division during the year, but it has been busily engaged in seeing that the material required for building the cars and locomotives contracted for last year was furnished and the work pushed to completion as rapidly as the circumstances permitted.

"During the year (up to and including December 9, 1919) 1,103 locomotives have been completed and 75,235 freight cars of all types have been received and put in service. During the year 240,000 tons of new rails were contracted for at an approximate cost of \$1,125,000 and 1,047,000 tons were delivered on contracts previously made."

Discussing the coal situation, the report recommended the continuance of government control of coal prices and distribution, and said:

"The reduced consumption of coal, due to the decreased demand for the manufacture of war materials, in the early months of the year led to a partial stagnation in the coal industry and a falling market, and contracts which expired generally on March 31 were renewed at prices which averaged about 13.5 per cent less than were paid during 1918. The competitive conditions which were restored by the suspension of price regulation by the Fuel Administration also resulted in a material shifting of the sources of the railroad supply, which was the subject of some discussion, but which gradually brought about a more normal distribution of the product.

"The policy of accumulating a storage supply during the summer as a stimulation to the industry and an insurance against an increased winter demand was generally inaugurated and carried out as well as conditions permitted.

"The equal car distribution rule acted to prevent the stor-

ing of some coal that would otherwise have been obtained, and some railroads found difficulty in regulating their supply on this account.

"More than 1,200 contracts for coal have been negotiated during the year, covering approximately 143,000,000 tons, 60 per cent of which expire on March 31, 1920, and 40 per cent at later dates, and all of which the railroad corporations have agreed to assume at the expiration of federal control.

"The general strike of the mine workers on November 1 resulted in the Fuel Administrator again taking charge of the situation and revoking the suspension of his previous orders regarding coal prices and priorities.

"At his request and acting by his authority, the Railroad Administration undertook the distribution of the available supply, and this work was placed in charge of the director of this division."

The report outlined the organization and work of the Central Coal Committee in handling the coal strike situation, and pointed out that special measures will probably be necessary to restore the railroad coal reserves depleted during the period of shortage due to the strike.

"In order to prevent a further depletion of the railroad stocks," the report said, "it will be necessary for the railroads to obtain larger shipments for current needs than would otherwise have been necessary.

"It would seem desirable that the Central Coal Committee should continue to exercise authoritative control of the distribution of all coal until this condition has been corrected and the production has reached a point adequate to supply all demands.

"It is also important, if the railroad fuel supply is to be adequately protected during the winter, that the establishment for a maximum price by governmental authority and the rules of the Fuel Administration with respect to priority of shipments in the distribution of the product should be continued for at least 60 days and longer if it should seem desirable at the expiration of that period. All present indications point to an excessive demand for both export and domestic consumption, due to the depletion of accumulated stocks as well as to possible shortage of the car supply, and unless the price is controlled and the shippers are obliged to recognize the priority of the railroad requirements it would appear that the current needs of the railroads could be met only with the greatest difficulty and at the expense of the diversion of commercial shipments in many cases."

The Forest Products section of the Division of Purchases reported that the Railroad Administration policy as to production and distribution of cross-ties inaugurated in 1918 has been successfully continued, but that uncertainty as to conditions which will prevail after the expiration of federal control had seriously retarded tie production during the past 60 days.

"The production during the first 10 months of the year," the report said, "has been 84,525,341 ties of all grades, as compared with 77,474,983 for the year 1918. The local production on railroads which have heretofore depended more or less on securing their supply from the territories of other lines has been stimulated to a remarkable extent. Some previously dependent railroads have been made wholly self-supporting, and the production on the average line of this class has been increased approximately 100 per cent, reducing their demands on the exporting roads and conserving transportation.

"The distribution of the supply has involved the transfer from one region to another during the 10 months of 21,978,556 ties.

"In sympathy with the increase in price of all grades of lumber, the prices of cross-ties advanced during the year from an average of 65 cents each to an average of 80 cents each, an increase of 23 per cent. The control of

the inspection by this division, resulting in a uniform application of the standard specifications for all ties produced, has materially improved the quality of the ties received, so that the increase in the price paid for the ties has been partially compensated for in the better grade of ties which have been obtained. The stocks on hand have gradually increased during the year, and on November 1 there were about 14,600,000 more ties available than at the beginning of the year, which is fairly good evidence that the current necessities have been well cared for."

The Forest Products Section controlled practically the entire operation of timber-treating plants, the report said. The output of treated ties for the year was estimated at 35,000,000, as against 30,609,209 during 1918.

Discussing the work of the Stores Section of the Division of Purchases in caring for, distributing and accounting for the material carried in stock by the railroads the report reads as follows:

"Immediate attention was given to reducing so far as possible the abnormally large stocks of material on all railroads which had been accumulated during the war period, and arrangements were made for the transfer of surplus stocks of material from one railroad to another, so as to make the best use of all material on hand and avoid the purchase of additional quantities. During the first 10 months of the year the value of material transferred in this manner has been \$18,739,597, and its use has prevented the necessity for additional purchases of that amount."

Anticipating the termination of the federal control of the roads, the report said:

"In anticipation of the termination of federal control, instructions have been sent to the regional directors outlining an arrangement under which the various railroad corporations will agree to assume liability for all material and supplies which may be shipped after the termination of federal control on outstanding current orders, the delivery of which has not been completed, and providing for the cancellation of the undelivered portion of such orders which the railroad corporations are not willing to assume liability for, thus relieving the director general from any responsibility for materials or supplies delivered after the termination of federal control."

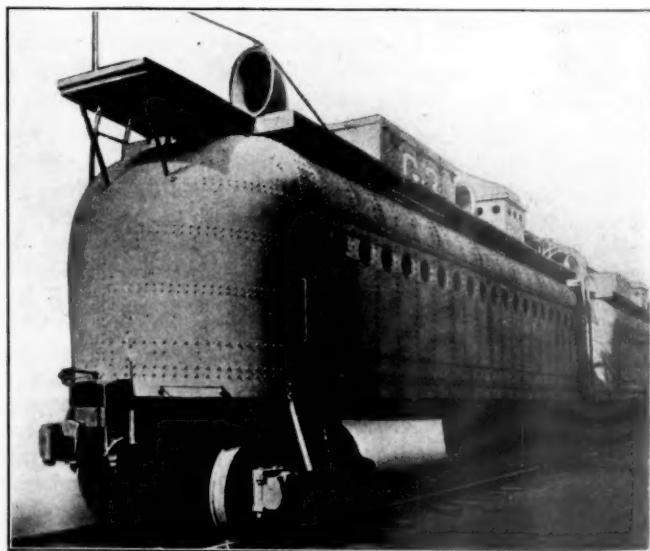


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Steel Armored Cars Recently Built for the Mexican Railways for Use in Bandit Infested Country

General News Department

The annual compensation to be paid by the government to the Delaware & Hudson, including subsidiary companies, as fixed in the contract which has just been executed by the director general is \$7,480,204; and that paid to the Pittsburgh, Cincinnati, Chicago & St. Louis is \$11,334,023.

As a tribute to E. P. Ripley, president of the Atchison, Topeka & Santa Fe, who died at Santa Barbara, Cal., on February 4, activities on the entire Santa Fe system ceased on February 6 from 12 o'clock to 12:05 o'clock (Pacific time), the time at which Mr. Ripley's funeral services began.

Following the initial session of the annual convention of the American Concrete Pipe Association, which will be held at the Great Northern hotel and the rooms of the Western Society of Engineers, Chicago, on February 20 and 21, the convention will divide into two sections to consider drain tile and concrete pipe respectively. J. E. Moody, chief engineer of the Massey Concrete Products Corporation, Chicago, will be in charge of the meetings of the concrete pipe division.

The American Association of Engineers will hold its second annual railroad conference at the Congress hotel, Chicago, on March 15. W. W. K. Sparrow, chief engineer of the Chicago, Milwaukee & St. Paul Railway Company, will act as chairman of the morning session of the conference. Among the topics which will be discussed are: the Association's work in the railroad field during 1919; plans for future railroad work; the organization and function of railroad sections; and the Association's railroad salary schedule.

Sleeping car porters on the Canadian Pacific are to have their pay advanced five and ten dollars a month, the increases to date from December 16, in accordance with the recommendation of a board of conciliation which has just made a report. The rates are to be, for the first year \$75; for the second year \$80 and for the third year \$85 a month. On observation cars, compartment cars and buffet cars the rates will be \$92.50 a month. About 500 porters will receive the benefit of this advance.

Numerous reports have been circulated recently to the effect that the Canadian Pacific was contemplating the electrification of its lines. E. W. Beatty, president of the road, in speaking of the reports recently, said, "There is no foundation for the statement that the Canadian Pacific is considering the electrification of its system as a whole. The possibility of electrification of portions of the line, especially in the mountains, is always before us and it would seem to be both feasible and practicable when traffic conditions warrant it. No works of this kind are, however, in immediate contemplation."

The compensation board appointed by the Interstate Commerce Commission to adjust the dispute between the Midland Valley Railroad and the Railroad Administration as to the amount of the just compensation that should be paid to it for the use of its property during federal control has rendered a decision, in the form of a report to the President, that it is entitled to \$765,679 per annum, or approximately the amount of its net railway operating income for the calendar year 1917, whereas the company claimed \$1,050,000 and the Railroad Administration had offered \$530,000. Its standard return as determined under the general rule would have been \$446,797.

The Western Railway Club held its regular monthly meeting at the Hotel Sherman, Chicago, on February 16, at which a paper on electric arc welding, illustrated by lantern slides, was presented by W. M. Brady, commercial electrical engineer of the General Electric Company, Chicago. This paper was substituted for one on "The Railroad Administration Wage Agreement with the Railway Employees' Department

of the American Federation of Labor," which was to have been presented by Frank McManamy, assistant director of the mechanical department of the Division of Operation of the United States Railroad Administration. Mr. McManamy was unavoidably detained in Washington and it is expected that he will present his paper at the April or the May meeting of the club.

Seven railroad systems and the entire Southwestern region of the United States Railroad Administration are now co-operating with the National Safety Council in securing the adoption of a system of safety instruction in public schools throughout the territory in which they operate. This system, the author of which is E. C. Payne, was described in the *Railway Age* of January 13, page 383. The roads which are now co-operating in the movement are the Chicago & North Western, the Pennsylvania (Eastern Lines), the Duluth, Missabe & Northern, the Maine Central, the Colorado & Southern, the Atchison, Topeka & Santa Fe and the Gulf, Colorado & Santa Fe. Representatives of these roads are placing copies of a booklet describing Payne's plan in the hands of school superintendents in each city in their respective territories.

Kansas will have no strike of railroad workers regardless of any disagreement that may arise as a result of the present controversy between the head of railroad employees' unions and the United States Railroad Administration, according to Governor Henry J. Allen of Kansas. In explaining the situation in that state recently, Governor Allen stated that the recently enacted state anti-strike and anti-lockout legislation in which is included a Court of Industrial Relations, will meet any emergency which may arise as a result of the present controversy and that this fact is appreciated by both employees and employers. Governor Allen added that union officers in Kansas realize the effectiveness of this legislation and that the chairman of the Kansas strike committee of the Brotherhood of Maintenance of Way Employees and Railway Shop laborers has asked the officers of the brotherhood to exclude Kansas from any strike order that may be promulgated.

The police department of the Wabash Railroad reports for the last calendar year 1,726 arrests, of which 116 were for car robberies, 36 for stolen property, 448 for train riding and 403 for trespassing. Of the persons arrested 87 per cent were convicted in court, a slightly higher percentage than in 1918, when the number of arrests was a little smaller. The total amount of fines paid in 1919 was \$16,142 and sentences to the penitentiary aggregated 273 years. G. S. Ward, chief of the department, reports that the total value of lost or stolen property recovered was \$148,276, and he names sixty different commodities or articles in a list of goods recovered. The chief is assisted by ten captains, twelve lieutenants, two sergeants and 67 regular patrolmen. There are, besides these, a number of extra watchmen, but it has been impossible to secure all of the watchmen needed, the large mills and factories along the road offering better salaries than the railroad pays. The cost of the force for the year was \$183,686, or, deducting the value of goods recovered, as mentioned above, a net cost of \$135,410.

American Railroad Association—Signal Division

The regular meeting of the Signal Division of the American Railroad Association will be held in the Congress Hotel, Chicago, on Monday and Tuesday, March 15 and 16. The pamphlet containing reports of committees to be considered at this meeting will be mailed by the secretary on February 28.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF DECEMBER, 1919

Name of road.	Average mileage operated during period.		Operating revenues—		Maintenance of way and structures.		Operating expenses—		Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss), comp. with last year.	
	Freight.	Passenger. (Inc. misc.)	Traffic.	Equipment.	Transportation.	General.	Total.						
Alabama & Vicksburg	141	\$157,993	\$86,778	\$263,757	\$41,878	\$43,374	\$4,407	\$113,259	\$9,341	\$15,113	\$1,028	\$35,614	
Alabama Great Southern	312	691,656	970,250	483,707	156,669	14,636	1,050	299,644	1,584	70,61	285,644	\$36,028	
Ann Arbor	301	400,758	63,662	17,005	1,428,892	100,381	10,572	229,661	10,572	39,559	82,60	84,148	
Atlanta, Topeka & Santa Fe	8,661	11,842,385	4,428,005	17,517,187	1,851,385	3,056,310	161,334	6,275,697	2,586,16	11,509,893	65,71	6,007,294	
Atlanta & West Point	93	119,537	92,356	244,062	33,333	44,359	6,225	103,276	7,211	1,98,666	81,39	4,5396	
Atlanta, Birmingham & Atlantic	639	305,739	95,241	430,413	81,883	140,227	13,993	223,752	13,433	473,392	109,98	—42,980	
Atlantic City	177	212,111	114,748	252,715	59,462	32,503	3,941	205,802	13,508	124,168	106,07	—15,347	
Atlantic Coast Line & Terminal	4,885	4,098,920	1,705,266	6,400,234	802,867	1,264,212	100,143	120,022	4,821,849	1,578,385	206,000	1,377,577	—27,057
Baltimore & Ohio Chicago Terminal	5,90	1,511	11,933,998	2,414,938	1,194,723	17,901	4,840,943	1,692,533	1,49,316	1,04,139	124,552	14,970,382	10,734,638
Baltimore & Ohio	5,15	11,933,998	2,414,938	1,194,723	1,692,533	1,692,533	1,692,533	7,865,374	303,750	14,970,382	95,07	77,674	77,893
Baltimore, Chesapeake & Atlantic	87	70,987	38,261	116,824	16,160	23,517	2,933	77,600	3,958	124,168	106,28	—7,344	
Bangor & Aroostook	632	402,987	88,999	521,042	115,151	166,172	1,920	205,802	13,508	124,168	98,27	—8,994	
Beaumont, Sour Lake & Western	118	95,852	32,667	137,705	31,453	35,203	1,961	48,298	6,375	124,168	92,95	—14,416	
Belt Ry. Co. of Chicago	31	31	346,336	31,196	56,318	226,393	7,737	321,936	21,556	1,293,936	259,01	—794,363	
Besserman & Lake Erie	217	433,736	38,758	499,573	49,242	486,102	11,450	274,631	21,556	1,293,936	44,140	—838,533	
Bingham & Garfield	29	132,987	2,342	155,840	31,410	45,132	1,432	77,689	5,087	124,168	80,01	—11,417	
Birmingham, Southern	2,258	3,929,495	1,725,042	6,441,182	5,778	45,20	45,20	28,652	4,745	124,168	106,87	—13,820	
Boston & Maine	2,259	3,929,495	1,725,042	6,441,182	5,778	45,20	45,20	3,604,381	188,321	124,168	106,87	—13,820	
Buffalo & Susquehanna	589	814,712	147,613	1,005,819	189,271	472,097	16,632	59,575	9,074	124,168	106,87	—13,820	
Buffalo, Rochester & Pittsburgh	589	814,712	147,613	1,005,819	189,271	472,097	16,632	59,575	9,074	124,168	106,87	—13,820	
Canadian Pacific Lines in Maine	233	268,365	89,665	369,739	51,619	85,980	2,543	288,132	3,336	381,609	103,21	—11,871	
Carolina, Clinchfield & Ohio	282	505,903	37,727	589,681	89,681	140,916	1,886	322,236	15,147	443,761	80,37	—87,043	
Central New England	301	526,192	28,187	578,854	117,475	205,821	3,020	348,399	15,033	443,761	115,03	—87,043	
Central of Georgia	1,918	1,255,906	625,056	2,104,875	413,985	408,330	47,163	848,399	18,088	84,81	32,840	—21,644	
Central of New Jersey	685	2,788,365	663,794	3,910,766	552,555	1,018,484	35,239	80,000	87,469	3,817,635	93,131	481,244	
Central Vermont	411	371,937	85,321	513,886	53,945	129,337	10,875	322,705	17,960	539,370	104,95	—25,483	
Charleston & Western Carolina	342	248,197	62,859	323,621	53,428	2,188,563	8,020	2,812,047	117,151	6,906,031	107,22	—64,846	
Chesapeake & Ohio	2,516	4,389,622	902,440	800,448	2,188,563	59,690	2,812,047	117,151	6,906,031	107,22	—64,846	1,238,278	
Chicago & Alton	1,050	1,584,534	528,977	2,382,108	336,602	295,082	20,932	999,784	38,760	2,06,175	92,61	—64,846	
Chicago & Eastern Illinois	1,131	1,535,498	419,581	336,602	167,031	81,153	21,636	1,031,569	15,897	2,06,175	90,37	209,110	
Chicago & Erie	269	222,076	73,306	896,546	71,058	133,804	9,530	558,553	27,607	803,916	89,66	—92,630	
Chicago & North Western	8,000	6,773,052	2,944,271	11,094,114	1,683,059	2,008,114	54,292	73,953	6,02,376	5,754	124,168	104,03	—44,736
Chicago, Burlington & Quincy	9,371	8,722,302	2,735,290	4,747,935	1,829,494	2,19,729	506,208	50,477	6,198,492	11,04,825	124,168	104,03	—44,736
Chicago, Great Western	1,496	1,230,386	2,07,302	1,07,902	1,07,902	1,07,902	1,07,902	33,694	1,058,767	45,239	100,94	1,17,554	1,17,554
Chicago, Indianapolis & Louisville	654	733,285	246,019	1,07,902	1,07,902	1,07,902	1,07,902	540,798	27,983	1,07,902	97,60	45,388	45,388
Chicago, Milwaukee & St. Paul	10,628	8,481,293	2,817,840	12,866,422	1,968,273	3,511,824	143,069	6,904,550	309,435	13,044,449	103,63	—458,027	
Chicago, Peoria & St. Louis	12	127,848	2,129	321,063	1,964	60,508	60,508	5,232	5,232	128,136	107,24	—23,257	
Chicago, Rock Island & Gulf	463	371,493	108,496	60,594	63,777	46,329	8,020	8,020	8,020	268,700	174,02	—122,613	
Chicago, Rock Island & Pacific	7,595	6,834,463	2,576,027	10,151,118	2,043,174	2,689,116	113,907	50,788	200,026	9,970,238	98,21	180,880	
Chicago, St. Paul, Minneapolis & Omaha	1,749	1,599,069	648,128	2,412,132	260,220	562,973	144,177	2,748	1,273,283	66,442	2,207,083	91,49	—100,663
Chicago, Terre Haute & Southern	374	2,220,076	22,717	358,495	48,066	144,177	2,748	1,273,283	66,442	2,207,083	115,04	—100,663	
Cincinnati, Lebanon & Northern	76	522,238	9,039	47,570	48,570	24,541	3,335	55,431	115,757	5,362	126,965	110,26	—53,377
Cincinnati, Indianapolis & Western	321	262,238	508,966	343,338	77,127	115,757	5,548	178,272	13,904	391,634	114,07	—48,295	
Cincinnati, Northern, New Orleans & Texas Pacific	231	972,355	1,871,939	21,648	1,647	2,440	2,440	30,299	1,273,283	66,442	2,207,083	91,49	—100,663
Cleveland, Cincinnati, Chic. & St. Louis	2,408	4,961,783	1,593,560	7,234,427	1,034,432	1,704,705	82,979	3,544,658	9,402,788	115,303	6,33,303	21,301	—17,437
Colorado & Wyoming	1,099	828,579	189,976	1,105,987	1,136,124	2,772	2,772	2,786,861	10,340	453,195	20,294	88,088	80,628
Cumberland Valley	43	13,014	1,153	25,312	27,732	2,732	2,732	2,732	2,732	3,667	30,232	119,43	4,920
Dalton, Delaware & Hudson	163	322,364	80,293	441,091	77,252	82,247	6,681	177,692	14,557	358,594	81,29	82,497	27,927
Dalton, Lackawanna & Western	956	4,423,436	244,333	2,380,843	19,974	44,039	4,002	1,508,769	11,171	270,171	93,98	173,363	195,260
Dalton, Rio Grande	2,895	2,400,849	57,746	3,165,616	620,534	1,326,644	43,966	2,925,171	118,656	5,999,425	80,85	1,207,722	155,333
Denver & Salt Lake	235	218,954	49,488	49,488	25,635	25,283	172,385	123,922	1,152,620	68,984	2,299,755	72,64	38,567
Detroit & Mackinac	381	98,532	39,395	149,057	26,105	56,078	1,889	1,377	158,986	5,287	401,808	158,986	36,201
Detroit & Toledo Shore Line	454	261,069	16,312	293,959	44,039	51,974	3,351	194,046	12,023	4,459,559	137,97	111,621	9,041
Duluth, Iron Range & Northern	292	122,699	24,448	128,448	38,663	224,243	10,672	115,742	17,632	295,729	230,28	167,311	12,763
Duluth, Missabe & Northern	407	175,484	49,488	128,448	38,663	224,243	10,672	115,742	17,632	295,729	207,51	167,311	12,763
Duluth, South Shore & Atlantic	598	218,049	110,830	361,188	54,134	94,886	5,312	246,249	12,886	199,727	115,47	—55,905	—66,408
Duluth, Winnipeg & Pacific	178	125,336	32,316	160,936	21,615	41,994	2,500	89,348	10,130	135,240	106,35	—10,223	7,953
East St. Louis Connecting	1,03	202,750	16,312	293,959	44,039	51,974	3,351	194,046	12,023	4,459,559	137,97	111,621	9,041
El Paso & Southwestern	832	876,776	200,735	1,051,050	1,051,050	1,051,050	1,051,050	1,051,050	1,051,050	1,051,050	1,051,050	1,051,050	1,051,050
El Paso, Juarez & Eastern	1,989	6,172,739	1,049,712	8,120,384	697,799	2,372,722	70,416	4,348,371	203,740	7,750,952	95,45	320,434	320,434
Florida, East Coast & Groverville	764	607,449	292,086	998,520	112,064	12,645	8,989	9,039					

RAILWAY AGE

Name of road	Average mileage operated during period		Operating revenues—		Maintenance of equipment		Operating expenses—		Operating ratio.	Net from railway operation.	Railway tax accrals.	Operating income (or loss).	Increase (or decrease) comp. with last year.		
	Freight	Passenger	(Inc. misc.)	Total	Way and structures	General	Total	Trans- portation.							
Florida East Coast	764,607,449	292,086	996,520	155,069	163,050	9,039	347,509	17,287	70.29	296,029	21,490	274,498	180,034		
Florida, Johnston & Gloversville { Steam	37,162	112,209	12,645	8,989	599	41,480	5,666	69,379	61.91	42,685	5,684	37,001	7,159		
Fort Smith & Western	253	112,242	35,231	29,724	24,581	4,086	50,239	7,246	117,025	38,236	2,411	36,321	17,230		
Fr. Worth & Denver City	454	821,697	\$36,185	\$1,052,636	\$22,919	\$4,116	\$49,012	\$22,967	77.43	\$237,507	\$34,379	\$202,851	—64,314		
Fr. Worth & Rio Grande	235	827,796	75,969	1,177,637	1,382,533	2,108	86,896	6,296	86.53	18,616	12,810	5,686	6,469		
Great Northern	8,176	5,579,332	1,580,458	8,089,469	1,23,305	1,99,997	55,161	4,158,647	156,216	78,028	20,182	1,143,730	—420,963		
Galveston Wharf	113	133,333	38,882	171	182	39,644	21,131	97,441	72,75	36,492	18,023	18,469	—86,896		
Georgia	328	314,780	168,527	521,632	61,072	12,485	273,864	21,548	91.97	41,836	10,763	31,041	—134,755		
Georgia & Florida & Florida	348	58,281	26,238	90,368	47,428	6,268	63,526	5,457	144,191	159,55	—53,824	11,580	—65,403		
Georgia Southern & Florida	402	257,555	155,434	440,629	72,021	100,009	5,692	215,335	10,836	405,304	33,365	21,245	—60,583		
Grand Rapids & Indiana	569	142,778	174,410	660,140	60,013	230,300	10,830	371,893	22,601	659,829	30,580	38,289	—73,296		
Grand Trunk, Western	1,001	1,406,126	141,596	1,546,628	1,93,576	16,506	1,087,823	70,317	2,022,099	104,57	102,665	62,665	—152,228		
Grand Trunk Lines in New England	172	414,596	32,946	49,126	154,260	16,029	111,319	12,532	312,703	62,89	10,893	17,3580	101,923		
Galveston, Harrisburg & San Antonio	252	181,511	23,349	181,894	55,988	5,578	53,72	57,349	1,564,238	67.04	768,963	154,046	612,883		
Green Bay & Western	307	181,666	52,239	249,842	427,942	379,842	17,057	946,544	2,820	323,452	9,328	16,737	20,512		
Gulf, Colorado & Santa Fe	1,937	682,646	62,072	725,146	78,087	7,049	59,016	1,825,786	73,07	673,056	16,449	506,021	—20,512		
Gulf, Mobile & Northern	467	181,311	2,07,366	9,52,375	1,77,643	2,172	9,219	2,127,055	9,681	285,361	112,27	31,198	56,384		
Hocking Valley	350	706,994	111,741	856,710	104,102	40,224	6,596	394,033	19,812	2,786	726,711	75,26	70,001		
Houston, East & West Texas	190	226,845	269,676	503,960	1,22,843	180,215	182,907	7,144	409,014	19,812	798,166	79,64	76,189	187,746	
Illinois Central	4,799	6,47,875	2,207,366	9,56,617	1,77,643	2,172	9,219	4,806,737	24,035	458,837	18,185	141,663	546,487	—410,303	
Indiana Harbor Belt	116	80,897	310,135	1,216,735	56,902	149,766	13,991	693,629	13,992	4,127	1,409,868	115.87	193,133	16,003	
International & Great Northern	1,159	800,897	80,778	869,616	181,600	24,048	10,957	463,069	26,352	976,047	106,48	12,024	209,201	—124,716	
Kanawha & Michigan	176	305,377	50,069	367,564	56,902	13,982	3,780	1,068,92	7,385	1,98,459	9,863	5,025	51,339	—1,606	
Kansas City, Mexico & Orient	272	124,006	18,055	149,359	4,651	2,137	2,980	1,07,551	6,212	287,198	78,17	120,59	34,256	33,718	
Kansas City, Mexico & Orient of Texas	465	126,047	31,469	166,143	32,466	2,232	35,214	1,06,268	5,270	5,951	80,176	68,387	12,517	—241,416	
Kansas City Southern	774	1,097,914	262,873	1,488,745	170,854	32,473	39,149	4,582,526	41,914	1,034,088	70,41	34,656	61,256	373,084	
Kansas City Terminal	27	78,923	80,778	161,750	21,788	1,144	1,144	56,124	1,496	1,124,432	55,88	19,944	29,871	—9,98	
Lake Erie & Western	902	201,080	3,398	213,098	25,187	2,021	2,53	1,39,892	7,385	1,38,424	9,863	5,025	46,314	—1,606	
Lake & Hudson River	96	346,240	23,323	367,374	35,214	1,06,268	5,270	1,33,126	10,037	2,03,364	12,75	10,909	12,024	—63,987	
Lake Erie & Western	234	340,691	53,263	372,331	5,443,231	729,754	1,702,501	43,98	2,740,204	126,010	5,662,264	70,41	34,656	61,256	373,084
Lake Erie & Western	1,435	4,408,919	53,693	5,443,231	1,488,745	170,854	32,473	39,149	4,582,526	41,914	1,034,088	70,41	34,656	61,256	373,084
Lake Erie & Western	199	398	532,850	950,573	1,72,059	1,72,059	1,72,059	13,982	11,265	1,124,432	55,88	19,944	29,871	—9,98	
Long Island & Salt Lake	1,168	93,012	458,549	1,548,559	148,555	30,751	19,347	58,317	30,857	1,105,461	73,43	39,924	340,819	12,915	
Los Angeles & Salt Lake	302	233,377	61,154	282,578	77,632	31,896	31,896	96,447	9,853	218,345	77,26	64,234	13,166	84,666	
Louisiana & Arkansas	5,013	6,843,033	2,149,151	9,65,628	62,902	6,915	6,915	9,944	9,247	240,993	51,51	217,803	132,099	—89,870	
Louisville & Nashville	388	2,132,163	71,160,154	1,899,720	1,03,398	39,341	10,166,66	4,25,531	192,644	7,528,001	78,04	211,912	181,650	1,935,597	
Midland Valley	101	1,076,870	63,174	233,219	4,842	32,532	5,729	100,282	7,906	192,359	75,95	73,537	40,576	357,960	
Minneapolis, St. Paul & Sault Ste. Marie	4,243	811,711	227,810	1,10,125	19,180	44,186	11,069	100,282	39,622	1,105,23	54,61	82,165	—8,655	12,004	
Michigan Central	1,365	67,356	42,250	104,368	148,559	4,453	4,453	1,91,802	7,433	1,94,146	106,48	12,024	209,201	12,915	
Missouri, Kansas & Texas	1,713	2,181,104	613,645	71,160,154	1,899,720	1,03,398	39,341	2,127,624	84,786	2,614,638	86,82	396,736	1,336,852	—66,351	
Missouri, Kansas & Texas	1,796	1,206,237	782,700	2,160,764	583,031	44,991	25,476	1,91,700	9,632	2,862,565	133.41	40,622	9,060	—49,683	
Missouri, Oklahoma & Gulf	329	1,339,348	1,209,342	1,824,454	8,656,302	1,667,676	1,808,770	9,10,06	4,094,336	1,927,449	132,48	34,263	327,476	—47,288	
Mobile & Ohio	997	1,225,864	210,772	1,518,554	30,36,59	49,776	37,847	2,79,75	6,28,52	1,114,134	85,85	32,747	327,476	—825,496	
Monongahela Connecting	108	225,536	1,219,198	1,70,242	30,36,59	37,847	32,532	3,612	90,936	139,321	72,19	32,747	327,476	—825,496	
Montour	56	41,129	229,503	980,104	90,442	14,504	14,504	1,22,47	1,24,440	6,993	10,371	167,14	28,310	114,753	
Morgan, Louisiana & St. Louis	400	699,030	1,939,747	1,808,581	486,431	49,895	42,288	81,110	42,494	1,69,559	93,81	239,123	84,811	—31,571	
Morgan, Louisiana & St. Louis	1,247	1,200,199	472,320	3,840,613	5,942,725	1,490,554	2,047,046	56,047	310,422	8,702,108	87,52	1,240,619	450,657	—125,262	
New Orleans & Northeastern { Pass...	203	358,494	122,249	110,136	85,896	8,991	295,003	18,13,16	522,831	95,18	26,335	185,086	—158,931	—236,629	
New Orleans Great Northern	284	139,642	47,238	195,725	43,919	3,612	39,322	3,612	90,936	10,054	186,229	95,17	5,582	102,212	
New Orleans, Texas & Mexico	191	168,657	45,871	220,671	58,152	4,5216	5,678,907	3,425	70,924	8,425	188,072	32,59	12,334	65,830	
New York, Central & St. Louis	6,075	16,081,340	7,120,237	26,856,203	2,59,144	5,678,907	271,620	12,219,071	6,58,682	21,842,115	81,32	4,013,723	4,013,723	—55,371	
New York, New Haven & Hartford	1,965	4,723,220	3,840,613	1,939,747	1,808,581	41,031	34,714	1,098,016	5,77,95	1,801,109	84,73	33,325	239,123	—31,571	
New York, Ontario & Western { Pass...	569	579,913	115,954	844,992	143,996	24,152	12,353	501,650	23,651	924,802	109,83	67,106	20,926	—121,745	
New York, Ontario & Western { Pass...	121	34,425	91,524	618,799	75,730	24,052	9,580	33,7,362	13,140	685,905	110,84	127,93	44,682	—142,741	
New York, New York, Susquehanna & Western	135	252,668	64,059	31,671	176,151	19,511	22,160	4,505	33,047	3,963	108,829	61,81	67,271		

REVENUES AND EXPENSES OF RAILWAYS

Month of December, 1919—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues—			Operating expenses—			Net from railway operation.	Operating ratio.	Railway tax accruals.	Operating income (or loss). comp. with last year.			
		Freight.	Pasenger.	Total. (In. misc.)	Maintenance of Way and structures.	Equipment.	Trans- portation.	General.	Total.					
Northwestern Pacific	538	\$354,233	\$181,041	\$596,045	\$160,284	\$70,942	\$5,272	\$260,363	\$512,496	85.98	\$83,549	\$25,981		
Northern Alabama	112	85,871	16,632	104,374	4,453	18,887	58,797	52,897	89,00	11,476	7,299	\$57,547		
Oregon Short Line	2,347	2,387,912	569,473	3,160,988	356,474	565,093	18,949	1,075,996	100,004	2,182,387	69,04	978,601	259,735	
Oregon-Washington R. R. & Nav. Co.	2,972	1,396,848	564,595	2,166,961	41,008	35,341	112,515	2,092,339	96,55	346,553	74,602	334,649	136,281	
Panhandle & Santa Fe	627,937	151,845	89,667	822,930	89,667	42,04	315,304	15,888	76,46	135,578	33,619	159,578	222,160	
Pennsylvania, Western	1,754	6,083,254	1,807,278	8,707,716	1,390,995	3,610,502	4,149,838	867,246	209,790	9,534,446	109,49	826,889	1,453,753	
Pennsylvania, Eastern	5,380	17,774,313	7,335,045	32,228,828	4,663,894	11,362,094	290,320	15,652,067	867,246	33,427,603	103,55	—1,148,770	2,255,920	
Petoria & Pekin Union	19	5,025,067	3,062	8,087,027	123,994	249,046	844,433	80,074	5,755	110,23	—12,696	—5,000	1,477	
Pere Marquette	2,240	2,255,037	556,211	3,072,670	202,233	778,354	25,025	1,602,262	77,331	2,693,856	87,67	378,815	60,204	
Perkomen	41	93,412	8,043	107,006	9,078	4,042	17	32,558	3,335	46,051	43,04	60,955	1,427	
Philadelphia & Reading	1,127	4,795,601	898,207	6,104,259	366,875	1,818,684	66,746	1,310,164	150,688	5,552,215	90,95	83,520	467,151	
Philadelphia, Bethlehem & Northeastern	204	73,557	2,082,122	8,505,539	1,313,196	4,131,533	110,645	4,120,019	209,917	9,669,296	117,21	—1,463,757	541,604	
Pittsburgh, Shawmut & Northern	224	2,030,731	240,412	2,459,908	83,834	18,177	47,908	1,266	72,544	7,510	102,54	—14,102		
Pittsburgh & West Virginia	63	117,224	556,221	3,072,670	202,233	778,354	25,025	1,602,262	77,331	2,693,856	87,67	378,815	60,204	
Pittsburgh & Shawmut	103	76,206	5,858	107,006	9,078	4,042	17	32,558	3,335	46,051	43,04	60,955	1,427	
Pittsburgh, Cincinnati, Chic. & St. Louis	2,383	5,535,487	234,917	5,755,259	83,834	18,177	47,908	1,266	72,544	7,510	102,54	—14,102		
Pittsburgh, Cincinnati, Chic. & St. Louis	204	73,557	2,082,122	8,505,539	1,313,196	4,131,533	110,645	4,120,019	209,917	9,669,296	117,21	—1,463,757	541,604	
Port Reading & Grand Island	21	18,349	240,412	2,459,908	83,834	18,177	47,908	1,266	72,544	7,510	102,54	—14,102		
Quincy, Omaha & Kansas City	255	64,380	22,837	65,285	653,187	41,585	117,225	21,032	3,339	238,944	12,640	428,138	67,40	
Richmond, Fred. & Potomac	81	302,393	255,285	633,187	41,585	117,225	21,032	3,339	238,944	12,640	428,138	67,40		
Rutland	415	334,917	113,220	413,575	36,023	111,750	7,500	208,294	10,423	401,348	102,36	13,400	195,559	
St. Joseph & Grand Island	258	181,471	38,619	218,150	1,487,071	288,071	2,406	148,374	329,071	9,781	102,36	—1,471,18		
St. Louis, Brownsville & Mexico	548	344,508	160,932	541,293	134,652	104,384	6,260	154,554	21,505	421,456	77,86	18,580	24,118	
St. Louis, Merchants Bridge Terminal	814	556,284	175,913	270,322	224,852	11,676	4,841	780	5,006	33,794	12,777	10,153	22,640	
St. Louis-San Francisco	736	113,370	448,305	563,522	125,442	5,219	1,438,394	73,363	3,073,528	205,346	5,827,261	81,03	1,363,464	52,915
St. Louis Transfer	6	98,357	20,633	119,697	61,920	—1,255	186	61,981	72,193	5,252	111,750	29,982	177,067	175,344
St. Louis, San Francisco & Texas	134	212,094	28,150	218,150	1,487,071	288,071	2,406	148,374	329,071	9,781	102,36	—1,471,18		
St. Louis, Southwest	939	119,932	81,015	199,761	47,958	41,207	15,567	12,500	20,238	1,045,941	10,423	13,400	195,559	
St. Louis, Southwestern of Texas	814	119,932	81,015	199,761	47,958	41,207	15,567	12,500	20,238	1,045,941	10,423	13,400	195,559	
St. Louis, Arkansas Pass	36	116,187	4,039,952	2,060,767	7,190,767	1,404,012	5,219	1,438,394	73,363	3,073,528	205,346	5,827,261	81,03	
Seaboard Air Line	3,563	2,376,590	971,923	3,687,554	673,739	910,079	71,518	1,829,918	111,750	3,632,372	98,50	134,733	80,666	
South Buffalo	11	23,220	131,163	288,071	215,870	2,156,892	3,321,999	170,941	5,006	7,669	140,10	—27,036	11,327	
Southern Ry. in Mississippi	228	119,932	81,015	199,761	47,958	41,207	15,567	12,500	20,238	1,045,941	10,423	13,400	195,559	
Southern Pacific	7,024	9,116,187	4,039,952	2,060,767	7,190,767	1,404,012	5,219	1,438,394	73,363	3,073,528	205,346	5,827,261	81,03	
Spokane International	156	149,192	23,308	175,410	33,662	8,625	1,575,79	47,304	4,923	95,903	54,67	79,507	72,529	
Spokane, Portland & Seattle	538	153,410	157,282	328,702	162,861	213,801	36,539	5,338	249,088	23,026	51,865	17,836	57,267	
Staten Island Rapid Transit	23	79,310	3,321,063	12,858,780	218,870	2,156,892	3,321,999	170,941	5,006	10,912	9,803	109,72	32,646	
Tennessee Central	292	119,932	81,015	199,761	47,958	41,207	15,567	12,500	20,238	1,045,941	10,423	13,400	195,559	
Terminal R. R. Ass'n. of St. Louis	36	3,321	4,039,952	2,060,767	7,190,767	1,404,012	5,219	1,438,394	73,363	3,073,528	205,346	5,827,261	81,03	
Texarkana & Fort Smith	87	43,598	80,631	190,954	80,592	17,770	217,659	1,168	55,766	2,965	105,609	130,32	24,572	
Texas & New Orleans	468	2,200,235	1,177,786	3,163,746	162,861	19,911	212,728	2,136	39,531	15,249	98,22	14,051	31,132	
Ulster & Delaware	1,946	511,588	46,593	569,192	61,690	44,926	30,258	30,408	7,520	1,045,941	10,423	13,400	195,559	
Toledo, Peoria & Western	435	2,503	1,660,255	1,675,788	8,603,356	1,321,737	2,08,950	46,575	2,301,139	266,502	71,16,107	83,006	1,477,219	
Toledo, St. Louis & Western	454	784,882	25,531	844,063	195,492	11,075	26,265	9,541	34,619	2,476	74,679	44,14	94,508	
Ulster & Delaware	368	152,308	30,527	152,308	54,636	19,911	22,127	3,805	72,621	1,73,271	92,33	12,34	13,128	
Union R. R.	40	1,078,994	69,474	1,082,469	1,082,469	139,017	20,477	415,93	10,840	75,514	12,34	162,352	44,387	
Union Pacific	3,614	3,214,628	833,968	4,022,412	700,421	90,976	57,918	2,476,338	1,301,139	266,502	71,16,107	83,006	1,477,219	
Washington Southern	35	113,968	183,926	183,640	321,652	42,550	2,242	2,242	9,154	228,393	91,701	12,34	162,352	
Utah	98	169,048	117,765	169,187	211,689	9,091	524,992	125,213	98,985	1,57,411	141,89	122,34	162,352	
Wilmington, Shreveport & Pacific	171	152,308	69,474	1,082,469	1,082,469	139,017	20,477	415,93	10,840	75,514	12,34	162,352	44,387	
Virginia	2,503	1,25,996	41,593	1,25,996	833,968	183,926	20,477	415,93	10,840	75,514	12,34	162,352	44,387	
Wabash Ry.	35	113,968	183,926	183,640	321,652	42,550	2,242	2,242	9,154	228,393	91,701	12,34	162,352	
Western Jersey & Seashore	361	279,330	339,022	81,814	1,111,646	367,626	54,636	211,689	9,091	524,992	125,213	98,985	1,57,411	
Western Maryland	689	1,041	1,078,994	1,291,018	138,103	20,477	415,93	10,840	75,514	12,34	162,352	44,387		
Western Pacific	1,041	1,078,994	1,291,018	138,103	20,477	415,93	10,840	75,514	12,34	162,352	44,387			
Western Ry. of Alabama	133	1,25,282	80,125	223,418	45,897	20,477	415,93	10,840	75,514	12,34	162,352	44,387		
Wheeling & Lake Erie	511	808,839	66,659	957,643	164,181	25,331	57,978	43,787	2,476,338	1,301,139	266,502	71,16,107	83,006	
Wichita Falls & Northwestern	328	1,38,635	50,028	202,371	64,377	11,075	26,265	9,541	34,619	153,571	125,213	98,985	1,57,411	
Yazoo & Mississippi Valley	1,381	1,48,624	68,166	2,15,908	43,086	11,075	26,265	9,541	34,619	153,571	125,213	98,985	1,57,411	
Minnesota & International	164	66,270	25,496	102,425	102,425	1,785	1							

February 20, 1920

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REVENUES AND EXPENSES OF RAILWAYS

TWELVE MONTHS OF CALENDAR YEAR 1919

Average mileage operated during period.	Operating revenues		Operating expenses		Net from railway operation.	Operating ratio.	Railway tax	Operating income (or loss).	Increase (or decrease) with last year.
	Total	(Inc. misc.)	Maintenance of equipment	Way and transportation.					
Name of road.									
Freight.									
Passenger.									
Period.									
141	\$1,888,833	\$774,485	\$2,794,556	\$20,028	\$1,117,258	\$2,375,556	\$21,746	\$136,817	+\$5,538
132	7,470,553	2,476,553	10,529,739	502,086	1,206,757	\$4,665,777	1,795,530	-\$145,883	-145,883
301	3,579,846	718,714	4,553,990	1,513,344	2,587,465	\$2,998,777	1,932,000	285,014	383,693
860	124,211,105	45,628,938	179,944,988	619,181	816,334	1,203,759	1,026,000	615,951	848,804
93	1,338,206	1,141,569	2,778,564	346,182	503,399	3,107,500	40,916	41,537,139	103,303
619	3,659,465	970,847	4,961,072	1,159,043	1,454,076	957,120	2,328,445	77,01	191,734
177	14,545,564	4,452,164	9,624,902	1,640,922	13,851,670	1,207,271	1,347,789	84,17	-\$145,883
4,867	40,842,112	18,448,229	63,559,452	1,513,344	718,714	1,556,631	4,108,965	12,075,081	285,014
90	136,802,852	31,724,016	26,168,745	15,180,550	40,916	63,140,290	3,017,500	49,402,254	1,795,530
5,151	1,338,206	1,141,569	2,778,564	346,182	503,399	1,055,581	84,525	2,067,912	74,42
632	1,019,236	520,512	1,603,332	1,827,977	441,024	957,120	2,788,678	151,697	5,741,153
118	985,504	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
217	11,701,708	433,611	1,860,750	1,358,156	665,153	1,207,271	1,347,789	84,17	-\$145,883
296	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
589	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
683	32,709,514	8,530,340	44,837,302	21,678,030	1,510,957	1,75,927	6,800,538	394,033	15,028,727
29	433,4081	24,810	1,314,006	452,109	492,729	15,607	2,040,865	147,986	1,933,374
37	1,316,802,852	31,724,016	26,168,745	1,518,780	1,560,244	1,207,271	1,347,789	84,17	-\$145,883
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244	2,328,445	77,01	191,734
2,558	43,031,174	21,837,786	72,585,880	9,566,430	15,216,533	495,804	38,666,685	50,497	1,389,775
296	1,787,447	1,591,470	13,955,592	2,366,024	1,207,271	1,347,789	2,055,269	234,425	10,432,120
589	1,065,69	317,739	1,364,168	313,743	1,560,244	1,560,244			

Equipment Trust Plan Agreed To

The Railroad Administration and the principal railroad companies have adopted the plan which has been reported from time to time as the negotiations have progressed for the financing of the equipment ordered by the Railroad Administration in 1918 by means of individual equipment trusts, payable in 15 annual installments, with the Guaranty Trust Company of New York as trustee.

Wood Preservers' Association Selects Officers

At the closing session of the American Wood Preservers' Association in Chicago on February 12, the following officers were chosen for the ensuing year: President, A. R. Joyce, Joyce-Watkins Company, Chicago; first vice-president, C. M. Taylor, superintendent, Port Reading Creosoting Plant (P. & R. and C. of N. J.), Port Reading, Pa.; second vice-president, V. K. Hendricks, assistant chief engineer, St. Louis-San Francisco,

inside the copper outside of the car, which was a regulation oil tank. Never before had a car been so welcome in the yards, and the word soon passed around to all departments.

A Wooden Railroad

The United States has a railroad, 15 miles long, laid with wooden rails. It is in Alaska and extends from the head of navigation on the Tolovana river up to some gold mines. The owner of the railroad, O. P. Gaustad, of Fairbanks, tells a reporter that his single locomotive, which is an automobile, made by Dodge Brothers in 1916, has done very profitable work throughout the last two seasons. The principal traffic of this railroad consists of logs which are carried from the river up to a sawmill half way to the upper terminus of the line, and lumber from the sawmill to the mines. The automobile has flanged wheels and hauls three cars at a time. Under favorable circumstances this motor hauls six tons of lading. For ordinary sup-

Railway Revenues and Expenses for December and Year 1919

The Interstate Commerce Commission has issued the usual compilations, subject to revision, from reports of revenues and expenses of Class I roads and 17 switching and terminal companies. The gross revenues for the month amounted to \$453,288,918 and for the year to \$5,184,230,244. The details are shown in the large table:

RAILWAY GROSS AND NET EARNINGS DECEMBER AND YEAR 1919

Item	December				Calendar year			
	Amount		Per mile of road operated		Amount		Per mile, road oper.	
	1919	1918	1919	1918	1919	1918	1919	1918
Average number miles operated.....	234,138.53	234,028.98	.....	.....	233,991.80	234,305.14	.....	.....
Revenues—								
Freight	Dollars 303,594,738	Dollars 309,727,496	Dollars 1,297	Dollars 1,323	Dollars 3,556,734,573	Dollars 3,458,190,626	Dollars 15,200	Dollars 14,759
Passenger	99,897,295	92,965,315	427	397	1,178,119,954	1,032,671,429	5,035	4,407
Mail	9,712,615	4,608,339	41	20	57,441,223	53,563,162	246	229
Express	16,042,670	12,860,944	69	55	127,663,836	126,231,839	546	539
All other transportation.....	11,104,768	10,407,808	47	44	126,928,774	126,536,226	542	540
Incidental	12,098,144	10,469,191	52	45	132,206,661	125,148,669	565	534
Joint facility—Cr.	1,035,020	579,588	4	3	7,300,115	6,012,987	31	26
Joint facility—Dr.	196,332	164,049	1	1	2,164,892	1,760,981	9	8
Railway operating revenues.....	453,288,918	441,454,632	1,936	1,886	5,184,230,244	4,926,593,957	22,156	21,026
Expenses—								
Maintenance of way and structures.....	63,906,960	70,347,728	273	301	778,105,318	656,600,508	3,326	2,802
Maintenance of equipment.....	117,149,081	109,012,348	500	466	1,232,701,638	1,110,270,700	5,268	4,739
Traffic	4,631,776	3,324,247	20	14	47,537,552	48,740,756	203	208
Transportation	213,875,400	201,109,965	914	859	2,193,264,002	2,056,478,949	9,373	8,777
Miscellaneous operations	4,463,927	3,507,969	19	15	48,972,187	38,851,289	210	166
General	11,192,636	10,085,655	48	43	25,436,777	112,319,160	536	479
Transportation for investment—Cr.	604,024	919,047	3	4	6,028,724	6,060,861	26	26
Railway operating expenses.....	414,615,756	396,468,865	1,771	1,694	4,419,988,750	4,017,209,501	18,890	17,145
Net revenue from railway operations....	38,673,162	44,985,767	165	192	764,241,494	909,384,456	3,266	3,881
Railway tax accrals (excluding "War Taxes")	22,175,921	14,883,196	95	64	199,193,698	186,966,159	851	798
Uncollectible railway revenues.....	107,170	65,035	.....	.....	917,570	614,726	4	2
Railway operating income.....	16,390,071	30,037,536	70	128	564,130,226	721,803,571	22,411	3,081
Equipment rents (Dr. Balance).....	1,752,198	2,028,266	7	9	32,598,295	15,118,119	140	65
Joint facility rent (Dr. Balance).....	1,856,531	595,340	8	2	15,738,644	13,574,282	67	58
Net of items 22, 23 and 24.....	12,781,342	27,413,930	55	117	515,793,287	693,111,170	2,204	2,958
Ratio of operating expenses to operating revenues	91.47	89.81	.....	.....	85.2	81.54	.....	.....

St. Louis, Mo.; secretary-treasurer, F. J. Angier, superintendent of timber preservation Baltimore & Ohio, Baltimore, Md.; members of executive committee, John Foley, forester, Pennsylvania Railroad, Philadelphia, Pa., and W. H. Grady, general superintendent, American Creosoting Company, Louisville, Ky. San Francisco was selected as the place for the next annual meeting.

Perils of Prohibition

According to the Springfield (Mass.) Republican, 20 employees of the Boston & Albany at its West Springfield yard had to be carried home in trucks last Sunday night because of a car of wine stopped there for repairs. It was a tank car, filled with 7,000 gallons of sherry, and the "party" held to celebrate its presence was participated in by about 40 men. The car was consigned to Louis K. Liggett, Roxbury, Mass. Some of the repairmen, with a judicious sense of smell, detected its cargo, and the party followed. The top was pried off and buckets and milk pails lowered into the wooden container

plies from the river to the mines the freight rate is \$3 per 100 lb. During the past season the motor traveled six thousand miles, sometimes making eight trips a day.

Associated General Contractors of America

The annual meeting of the Associated General Contractors of America will be held at the Hotel Morrison, Chicago, on February 18 and 19, in conjunction with a national conference on construction. The sessions of the annual meeting will be held in the mornings and the sessions of the national conference on construction in the afternoons of these days. On February 19 three sessions of the conference will be held, one of which will be devoted to a discussion of "A National Department of Public Works," and "The Disposition of the Railroads." This meeting, which will be conducted by the Public Works and Railroad Contractors' Division of the National Conference, will be addressed by Samuel O. Dunn, editor of the *Railway Age*, W. H. Finley, president of the

Chicago & North Western Railway Company, and Richard Waterman, secretary of the Railroad Committee of the United States Chamber of Commerce. At this session also M. O. Leighton, chairman of the National Public Works Department Association, Washington, and Frank I. Bennett, director of the Illinois State Department of Public Works and Buildings, will talk on "A National Department of Public Works," and William B. King, of the firm of King & King, attorneys, Washington, will talk on "Washington Affairs." The annual dinner will be held on Thursday evening with Major-General Leonard Wood as the principal speaker.

Cape to Cairo

Cecil Rhodes's dream of a Cape-to-Cairo line is coming true in more ways than one. An air route from Egypt to Cape Town is now open. British surveyors and engineers have toiled for a year to explore and plan the route. Three parties of officers and men were assigned to as many sections. They collected information, established aerodromes and landing places at intervals of 200 miles or less, and laid in gasoline and other stores. Some aerodromes had to be cut from dense jungle where thousands of trees required felling. Ant-hills reaching 25 feet in height had to be carried away in baskets. For one aerodrome in Northern Rhodesia 700 natives worked five months to remove 25,000 tons of soil.

The length of the route, measuring by the lines of railroad, steamer and ground transport is 6,223 miles, and at ordinary speed a journey would consume from 59 to 75 days. The distance by the aerial line is only 5,200 miles, and under favorable conditions an airplane should cover it in 52 hours' flying time. If the airmen flew 8 hours a day, he could make the trip in a week. In a few years, realizing Cecil Rhodes's dream, complete rail and steamer connection will be established. The railway to Cape Town now runs up well into the Belgian Congo, about 2,000 miles, and there is uninterrupted rail and steamer communication from Cairo south to Rejaf, over 2,400 miles. But steam travel will always be slow compared with air. From Cairo to Rejaf now takes 18 days.

Perils cannot be disregarded. In the central zone especially, heavy jungles make landing at other than the prepared spots almost impossible; water is hard to find; tsetse flies and wild beasts abound. But the fact that the line should have been so quickly laid out and tested is a promise that difficulties will, literally, be surmounted.—*New York Evening Post*.

Record Coal Movement

In spite of the repeatedly unfavorable weather conditions in extended portions of the country and the serious dislocation of coal cars due to the necessity for moving coal all the way from the east to the west during the coal strike, reports show that more bituminous coal was produced and transported during the month of January, 1920, than during January in any of the preceding seven years.

The figures of production of bituminous coal, including coal coked, for January, from 1913 to 1920, follows:

January, 1913.....	42,276,000 tons
January, 1914.....	40,188,000 tons
January, 1915.....	37,190,000 tons
January, 1916.....	46,596,000 tons
January, 1917.....	47,967,000 tons
January, 1918.....	42,227,000 tons
January, 1919.....	41,487,000 tons
January, 1920.....	48,732,000 tons

The Geological Survey, in its last weekly report, says: "The causes underlying the shortage of cars east of the Mississippi, with the exception of Alabama and Michigan, were three. In the first place, a scarcity of cars is to be expected during the winter months in years of active demand. Such was the experience of the country in 1917 and 1918, and had it not been for the slump in demand, the experience would doubtless have been repeated in 1919. The second cause is found in the extraordinary dislocation of transportation necessitated by the strike. Pennsylvania coal was carried as far west as Montana. The double difficulty thus created was rendered acute by the most severe weather conditions that have occurred since the great storms of December, 1917, and January, 1918. Over much of the country from the Ohio and Tennessee valleys eastward to the coast, precipitation this year was in the form of sleet, and the heavy ice coating greatly interfered with traffic."

Traffic News

The Traffic Club of Cleveland, Ohio, will hold its annual banquet on February 25, at the Hotel Winton, Cleveland.

The Milwaukee (Wis.) Traffic Club, which discontinued two years ago, held a "revival" meeting on February 7, and re-elected the officers who were in office at the time of its dissolution.

The Interstate Commerce Commission has issued its decision containing specific conclusions as to the rules and regulations as well as rates proposed in Perishable Protective Tariff No. 1, issued by the Railroad Administration. It is understood that its changes are so extensive as to prevent the tariff being made effective before the expiration of federal control.

The Panama Canal, according to the report of the governor of the Canal Zone for the month of December, enjoyed in that month the largest traffic in its history, the number of vessels passing through being 260; net tonnage, 927,726 tons, which was 330,588 tons in excess of the movement in November, and 262,899 tons more than in May, 1918, which was the largest previous month's movement of commercial traffic. Of 89 ships bound for the west coast of Central and South America, 47 were in ballast.

The California Wholesale Potato Dealers' Association, in telegrams addressed to President Wilson and to California's representatives in Congress, has requested the appointment of Max Thelen, director of the Division of Public Service of the United States Railroad Administration, to the vacancy on the Interstate Commerce Commission. The telegrams state that since Franklin K. Lane left the Commission, California and the Southwest have been without representation.

The rule, recently announced in Washington, forbidding the acceptance of silk, raw, spun, or thrown, for transportation by freight, except in carloads, goes into effect on March 1. Replying to protests from large numbers of shippers the Administration says that shipments of silk have sometimes been valued at a higher rate per pound than some of the precious commodities, like jewelry, which have never been regarded as legitimate freight matter. The Administration holds that the only proper way to send the shipments under consideration is by express.

According to a report on overseas traffic for the week ended February 14, 1920, made to Director General Hines, there were 4,187 cars of commercial export freight received at North Atlantic ports, while for the corresponding period last year there were but 3,344 cars received. Receipts at these ports increased 843 cars or 22.2 per cent. Deliveries to ships increased 1,977 cars, or 73 per cent. At South Atlantic and Gulf ports there were 12,138 cars of export freight on hand on February 9, as against 11,760 cars on February 2, an increase of 378 cars. On February 14, 1920, there were 8,858,803 bushels of grain stored in elevators at North Atlantic ports. There were received during the week 2,393,110 bushels, while 2,289,558 were cleared. At Gulf ports on February 14, there were 5,370,482 bushels of grain stored in elevators, representing 52.5 per cent of the total elevator capacity.

The Houston (Texas) Traffic Club recently elected the following officers: President, F. L. Clements, traffic manager of the Gulf Pipe Line Co.; vice-president, John T. Bowe, general freight agent of the Trinity & Brazos Valley; second vice-president, I. R. Palmer, traffic manager of the Trinity River Lumber Co.; third vice-president, Joe McConnell, traffic manager of the Peden Iron & Steel Co.; secretary, R. V. Gillispie, assistant traffic manager of the Gulf Pipe Line Co.; treasurer, A. Kimball, traffic manager of the Houston Drug Company; directors, G. L. Thacker, traffic manager of the Southern Texas Grain Co.; J. F. Hennessey, Jr., Missouri, Kansas & Texas; Clint Hollady, traffic manager of the F. W. Heitmann & Co.; R. H. Carmichael, superintendent of the Direct Navigation Co.; S. J. Westheimer, president of the Westheimer Transfer Co. At a later date Mr. Gillispie resigned as secretary and

E. L. Williams, traffic manager of the Southern Drug Co., was elected in his place.

The five city ticket offices in New York City, conducted jointly under the United States Railroad Administration by a committee, since September, 1918, are to be continued in operation for the present, the same as hitherto. A meeting of representatives of the railroad corporations held on Tuesday of this week recommended that this joint operation be continued at least until October next. George A. Cullen, passenger traffic manager of the Delaware, Lackawanna & Western, chairman of the committee which has supervised the joint offices, calculates that the cost of running the offices has been about 40 per cent less than the cost of the individual offices as maintained by the separate railroads prior to the advent of federal control. The gross sales made at the joint offices have amounted to about \$30,000,000 a year and the cost of running the offices has been 2.09 per cent of the gross sales.

The shipments of anthracite for January as reported to the Anthracite Bureau of Information at Philadelphia, amounted to 5,713,319 gross tons, as compared with 6,138,460 tons in the preceding month and with 5,934,241 in January of last year. Total shipments from April 1 have amounted to 58,823,700 gross tons, as compared with 63,856,917 tons from April 1, 1918, to January 31, 1919, the difference being due almost entirely to the large washery production of steam sizes in the earlier year:

	January, 1920	Coal Year, 1919-1920	Coal Year, 1916-1917
P. & R.	1,155,092	11,896,144	10,574,453
L. V.	1,011,116	10,700,403	10,024,566
C. of N. J.	513,434	5,312,165	5,327,872
D. L. & W.	935,242	9,044,409	8,875,516
D. & H.	614,375	6,682,934	6,035,595
Penna.	404,213	4,151,589	4,573,286
Erie	636,430	6,437,593	6,292,728
N. Y. O. & W.	168,447	1,704,275	1,595,831
L. & N. E.	274,970	2,894,188	2,309,255
	5,713,319	58,823,700	55,609,082

"Ten Commandments"

The latest exhortation from the Railroad Commission of Texas for the benefit of shippers of freight in that state takes a scriptural form. Desiring to aid the railroads and the shippers in relieving the present shortage of freight cars, the Commission says:

1. Load cars to full carrying capacity.
2. Load cars properly and promptly.
3. Unload cars and release to carrier promptly.
4. Order cars only when and in number needed.
5. Order goods in quantities representing car capacity.
6. Order goods from nearest available source.
7. Pool orders, as to source, to obtain full carload.
8. Take no advantage of free time allowed under demurrage rule.
9. Do not use cars for storage.
10. Ship by truck for short hauls and intra-terminal service.

Cincinnati as a Railroad Center

John A. Morris, terminal manager of the Cincinnati, (Ohio) terminals, at the request of the Cincinnati Chamber of Commerce, has compiled a statement of Cincinnati's industrial activity as gauged by inbound and outbound freight tonnage. These figures call attention to the importance of the Cincinnati gateway as an interchange point and of Cincinnati as an industrial center. The figures as presented to the Chamber of Commerce which include both through and local traffic, are as follows:

	Inbound	Outbound	Total
Average daily tonnage.....	102,600 tons	97,400 tons	199,000 tons
Average daily freight trains.....	106	107	213
Average daily passenger trains.....	134	140	274
Industries	Inbound	371 cars	12,243 tons
Industries	Outbound	362 cars	11,946 tons
Freight houses.....	Inbound	394 cars	5,910 tons
Freight houses.....	Outbound	448 cars	4,480 tons
Total.....			34,579 tons
Total inbound.....		18,153 tons	
Total outbound.....		16,426 tons	

Commission and Court News

State Commissions

In a joint application filed with the California State Railroad Commission by the Atchison, Topeka & Santa Fe, and the San Diego & Arizona, the commissioners were asked to approve an agreement between these roads providing for the joint use of the Santa Fe tracks and station at San Diego, Cal. The agreement has the approval of the United States Railroad Administration.

Court News

Right of Town to Purchase Abandoned Railroad

A lumber company built a railroad for which a town subsequently granted a franchise, which was assigned by the lumber company through incorporators to a railroad company. The latter met difficulties leading up to a mortgage foreclosure suit. The Michigan Supreme Court holds that the citizens of the town or others interested are entitled to an opportunity to purchase the railroad for its continuance as a carrier if so disposed, the railroad itself asking permission to abandon operations; and a receiver may be appointed to take charge of and conserve the property preparatory to its sale under the foreclosure decree.—Gasser v. Garden Bay R. Co. (Mich.) 171 N. W. 791.

Hauling Defective Car as Proximate Cause of Injury

A freight car with but one drawbar was coupled to the rear of the caboose at an intermediate station to be moved to be repaired; it was being used in interstate commerce. To remove the markers from the caboose to the car, the conductor attempting to board the caboose while in motion failed to obtain a hold upon the grabiron and fell so that one arm was run over. The Circuit Court of Appeals, Sixth Circuit, holds that such hauling of the crippled car being unlawful under the federal Safety Appliance Acts, and constituting negligence, the question in an action for damages under the federal Employers' Liability Act, of whether the transportation of the defective car was the proximate cause of the conductor's injury was for the jury, which found for the plaintiff.—Erie v. Schleenbaker, 257 Fed. 667.

Foreign Shipments and the Carmack Amendment

In an action to recover freight and storage charges on a shipment of moss over the line of the plaintiff, the Chicago, Milwaukee & St. Paul, from Mather, Wis., on a bill of lading stating that the property was consigned to Pickstone, "destination Cape Town, South Africa, via P. M. R. A. & Boat at N. Y., c/o Caldwell," and that the railroad agreed to transport only over its own line, it appeared that on arrival of the shipment at New York, payment of the freight to that point was refused by Caldwell, on account of lack of funds belonging to the consignee. The moss was sold to pay freight and storage charges. The trial court concluded that the contract of shipment was a through contract from Mather to Cape Town, and adjudged that the defendant shipper recover of the plaintiff the value of the moss as for a conversion, on the ground that before making the shipment the shipper had inquired of the railroad's agent at Sparta, Wis., the freight rate on a carload of moss from Mather to Cape Town, and was given a through rate. The Wisconsin Supreme Court reversed this judgment and directed judgment for the railroad for the following reasons: (1) The familiar principle that oral negotiations are merged in and supplanted by a written contract afterwards entered into between the parties covering the same subject applied to the present case; hence the oral quotation of a through rate to Cape Town is of no moment, because the written bill of lading became the contract between the parties. (2) This being a shipment to a foreign country, the Carmack Amendment did not apply, and it was competent for the parties to make a contract limiting the railroad's liability to its own line. (3) It followed

that there was no default on the plaintiff's part by reason of the fact that the shipment did not reach Cape Town, and that it was entitled to recover the freight charge to New York at the published rate, as well as storage charges, less the net amount realized by sale of the goods.—Chicago, M. & St. P. (Wis.) 171 N. W. 757.

Railroad's Right of Precedence Over Commercial Buyers of Coal

The federal district court for the Southern District of Ohio holds that a railroad which has a contract with a coal company to furnish coal for its engines, on which the coal company was delinquent, has the right, after notice of its intention, to refuse to accept for transportation cars of coal consigned to a commercial buyer, and to appropriate such coal to its own use, under the contract, where it was necessary to enable it to operate its trains. The court said that it would seem, in the nature of things, that it is the duty of the mine owner to supply the fuel coal before supplying the commercial coal * * * the contractor for commercial coal would seem to be bound by the implication that the mine owner would necessarily fill his contract with the railroad company first, at least to the extent of sufficient coal to enable it to carry commercial coal to the end of its line.—Springfield L., H. & Power Co. v. Norfolk & Western, 260 Fed. 254.

United States Supreme Court

Terminal Company Is a Common Carrier

The United States Supreme Court has sustained the decision of the United States Circuit Court of Appeals imposing a fine of \$500 on the Atlanta Terminal Company, Atlanta, Ga., for violation of the hours of service act in keeping a telegrapher on duty, in March, 1917, beyond the number of hours allowed by the law. In the district court the company was acquitted, on the plea that it was not a common carrier; but this decision was reversed by the higher court, and is now sustained by the highest court, in its refusal of a writ of certiorari.

Right to Discontinue Railroad Operated at a Loss

A Louisiana lumber company sued to set aside an order of the State Railroad Commission requiring it either directly or through arrangements with the Kentwood & Eastern to operate its narrow gage railroad between Kentwood and Hackley on schedules and days to be approved by the Commission, alleging that the order could not be complied with except at a loss of more than \$1,500 a month. The Commission asked for an injunction against the tearing up or abandoning of the road. The State Supreme Court, after saying that the two corporations were one, under different names, stated that the only question left for determination was whether the plaintiff could be compelled by the Commission to operate its railroad, and concluded that although the railroad showed a loss, the test of the plaintiff's rights was the net result of the whole enterprise—the entire business of the corporation—and on that ground made its decree upholding the order and granting the injunction.

The Supreme Court of the United States is of the opinion that the test applied was wrong under the decisions of that court. The opinion, by Mr. Justice Holmes, in part said: "A carrier cannot be compelled to carry on even a branch of business at a loss, much less the whole business of carriage. On this point it is enough to refer to Northern Pacific v. North Dakota, 236 U. S. 585, 595, 599, 600, 604, and Norfolk & Western v. West Virginia, 236 U. S. 605, 609, 614. It is true that if a railroad continues to exercise the power conferred upon it by a charter from a State, the State may require it to fulfil an obligation imposed by the charter even though fulfilment in that particular may cause a loss. Missouri Pacific v. Kansas, 216 U. S. 262, 276, 278. But that special rule is too far from throwing any doubt upon a general principle to need further argument here. The plaintiff may be making money from its sawmill and lumber business, but it no more can be compelled to spend that than it can be compelled to spend any other money to maintain a railroad for the benefit of others who do not care to pay for it. If the plaintiff be taken to have granted to the public an interest in the use of the railroad it may withdraw its grant by discontinuing the use when that use can be kept up only at a loss." The decree of the State Supreme Court was therefore reversed.—Brooks-Scanlon Co. v. Railroad Commission. Decided February 2, 1920.

Foreign Railway News

LONDON.

The German Government has recently surrendered 52 locomotives and 829 railway trucks to the Lettish government.

English Freight Cars for Belgium

The Belgian State railways have bought 13,000 wagons from the British Government.

Railway Extension in Finland

A railway line is planned from Sordavala to Salonis, writes Consul Parker W. Buhrman from Helsingfors, under date of December 17. This is an eastern extension of the Finnish railways by the north coast of Lake Ladoga to the Russian border, and will eventually connect with the Murman Line.

Federated Malay States Railways Reduce Fares

LONDON.

An abstract from the Engineer states that the Federated Malay States railways have reduced the increase of 50 per cent in passenger fares, which was made to curtail traffic, to 25 per cent. The high cost of labor and materials prevents a return to pre-war fares.

Colombian Railways Need Rolling Stock

LONDON.

An abstract from the Times' Trade Supplement states that the Colombian railways are at present in great need of new rolling stock. In the very near future extensions are to be made, and this will create a demand for locomotives, coaches and freight cars. There will also be a large demand for permanent way materials owing to the reconstruction of large sections of the Colombian railways.

Permanent Way Required for Siam Railways

LONDON.

The Siam States Railways are asking for tenders for some 30,000 metric tons of steel rails and permanent way material for their lines. This is owing to the lines being converted to metre gage.

French Railwaymen's Wages

LONDON.

The London Times of January 31, tells of a serious situation among the railwaymen in France. The Parisian workers are very much in favor of a strike although most of the members of the Union are against it. The men in the vicinity of Paris now receive a minimum wage of 2,400 francs (\$480) a year, and in addition a war bonus of 720 francs (\$144), a residence bonus of 600 francs (\$120), and on the state system 1,080 francs (\$216). They now demand a minimum wage of 3,800 francs (\$760), the maintenance of the subsidies of 720 francs and 1,080 francs and an increase of the residence bonus from 600 francs to 1,200 francs, all of which amount to a minimum wage of 6,800 francs (\$1,360). Behind the movement for increased wages, the railwaymen in general demand the nationalization of the roads.

Receipts and Expenditures on English Railways

LONDON.

The Ministry of Transport has recently issued a statement regarding the financial results of railway operation for the eight months ending November 30, 1919. The total revenue during this period was £126,725,010. The total expenditure was £115,746,459, giving a balance of revenue earned over expenditure of £10,978,551, or an operating ratio of 91.5 per cent. For this period the standard year proportion of net receipts under the government guarantee was £33,391,000 to which £699,400 is added for interest on capital works brought into use. Thus the net government liability for the eight months is £23,174,429. The total traffic revenue earned was distributed roughly as follows: Passenger train traffic 50.5 per cent, freight train traffic 38.5 per

cent, and government traffic 11 per cent. The report also shows a charge of £1,127,569 for arrears in maintenance and renewal in ways and works.

Electrification on the Midi of France

LONDON.

The Midi railway of France, is making preparations to electrify certain portions of its lines, obtaining power from the northern slopes of the Pyrenees. The 3,000-volt d. c. system will be used.

It is reported that the Midi railway will build all its electric locomotive equipment in its own shops and will make every endeavor to contract for all work involved in its electrification program with French concerns. It is expected that ultimately the entire line will be electrified.

Moroccan Railway Rates Increased

LONDON.

An abstract from the Times' Trade Supplement states that the railway rates in the French Protectorate of Morocco has been officially announced. These additional charges vary from a 200 per cent increase on baggage carried on passenger trains and on overweight luggage to a 50 per cent increase on goods of "first necessity," such as grain, building materials, flour, etc. Rates on other merchandise which does not fall in the category of "first necessities" are advanced by from 100 per cent to 150 per cent. There is also an advance in passenger fares.

Exports of Cars in December

The exports of freight cars in December numbered 2,087 valued at \$3,368,260, representing a considerable decrease from November. The detailed figures as compiled by the Division of Statistics of the Bureau of Foreign and Domestic Commerce are as follows:

EXPORTS OF CARS FOR STEAM RAILWAYS IN DECEMBER					
Countries	89		91		Freight and other
	Passenger	Number	Dollars	Number	Dollars
Norway	1	4,300		31	74,400
Canada	1	6,500			
Cuba	4	46,852		554	684,944
France				267	613,789
Italy				650	1,170,400
Mexico				73	89,655
Dominican Republic				2	2,880
Argentina				10	9,597
Brazil				200	242,595
Russia in Asia				300	480,000
Total	6	57,652		2,087	3,368,260

Exports of Railway Material from the United Kingdom

LONDON.

According to the Board of Trade returns the exports of railway material during the twelve months ended December 31, 1919, were as follows:

	1919	1918
Locomotives	£1,781,234	£1,075,922
Rails	2,009,184	484,200
Carriages (passenger cars)	594,352	561,476
Wagons (freight cars)	3,374,142	328,811
Wheels and axles	821,575	344,468
Tires and axles	900,955	619,759
Rail chairs and metal ties	317,704	164,090
Miscellaneous permanent way	778,905	557,033
Total permanent way	3,143,142	1,221,095

The weight of rails exported was 125,216 tons as against 26,335 tons in 1918, and of rail chairs and metal ties 21,574 tons as against 10,173 tons in 1918. During December locomotives to the value of £381,711 were exported, which were distributed as follows: Argentine £22,295; other countries in South America £24,875; British South Africa £137,126; British India £55,658; and Australia £11,520.

Developments in South Manchuria

Marked industrial development is taking place in South Manchuria, organized, in large part, by the South Manchuria Railway, says a recent publication of the Guaranty Trust Company, New York. The railway's plans are reported to provide for expansion covering a period of ten years and affecting the railway itself, its shipping and harbors, its mines, iron works, gas and electrical enterprises. It is planned to replace the present 80-lb. rails by 100-lb. rails over the whole line from Changchun

to Dairen. Shipments of 100-lb. rails, ordered from the United States, are arriving.

The doubling of the track from Mukden to Changchun is under way. Large orders for railway equipment have been placed in the United States. The ten year program calls for the improvement of the wharf facilities at Dairen by extending the quay line to 18,760 ft., the berthing capacity to 15,000,000 tons, the cargo handling capacity to 12,000,000 tons per annum, warehousing space to 640,000 square yards and open storage to 1,960,000 square yards. Coolie labor will be supplemented by mechanical appliances. It is proposed to purchase cranes and motor trucks for loading and shifting freight.

Exports of Steam Locomotives in December

The exports of locomotives in December numbering 96, valued at \$2,892,082, were double those of November, but only slightly more than half those of October. The largest customer was Cuba, which took 36 locomotives valued at \$945,569. Russia in Europe took 20 locomotives valued at \$900,000 and shipments are reported of 12 locomotives valued at \$550,280 to Germany.

The detailed figures as compiled by the Division of Statistics of the Bureau of Foreign and Domestic Commerce, are as follows:

EXPORTS STEAM LOCOMOTIVES IN DECEMBER		
Countries	Number	Dollars
Germany	12	550,280
Norway	2	79,360
Russia in Europe	20	900,000
British Honduras	1	13,000
Canada	12	159,406
Guatemala	1	10,100
Mexico	2	10,085
Jamaica	2	71,180
Cuba	36	945,569
Dominican Republic	3	75,130
Colombia	1	19,500
New Zealand	2	29,410
Philippine Islands	1	11,500
French Africa	1	17,562
Total	96	2,892,082

Alsace-Lorraine and the French Railways

A recent article in the *Journal des Transports* gives some interesting particulars of the extent to which railway and other transport facilities in France will benefit by the return of Alsace-Lorraine to the mother country. Excluding Alsace-Lorraine, the French railway system comprises 45,000 km. of standard gage and 15,000 km. of narrow gage line, to which are now added 2,040 km. of standard and 80 km. of narrow gage. Some 400 km. of canals are added to the previous French network of about 5,000 km., and the 300,000 odd km. of main roads are increased by 8,660 km. Alsace-Lorraine will also be able to supply France with an asset of greater immediate importance than an addition to its railway mileage, namely, locomotives and rolling stock. Prior to the war, the reconquered territory had an annual output of 6,150 tons of locomotives, 400 passenger vehicles and nearly 1,400 goods wagons, in addition to large quantities of trackwork. The engineering works in this district include the famous shops of the Societe Alsacienne de Constructions Mecaniques at Mulhouse and Grafenstaden, and the works at Martigny, Bisheim and Reichsofen. In addition, there are the coal deposits of the Saar Valley, and the oilfields which, in the near future, will help out the French petrol shortage. Incidentally, it is expected that the engineering facilities in Alsace-Lorraine will make France entirely self-supporting in the matter of rolling-stock.

Locomotive Building in Belgium

According to a recent report on the subject of locomotive production in Belgium, says the *Railway Gazette*, London, there were in that country prior to the war 20 factories in which the construction of railway engines was undertaken. The whole of these were damaged very considerably by the German army and most of the plant removed, one factory being completely destroyed. The work so far undertaken since the cessation of hostilities has been limited to the repair of the buildings and plant, and, as far as has been possible, replacement of the shop equipment. The shortage of engines and the poor condition of those available gives scope for immediate activity in this branch of activity, but the shortage of fuel, the difficulty of obtaining raw material, etc., want of capital and the exorbitant demands of the workmen, all stand in the way of progress. The total number of workmen at present employed is 4,542, or about 75 per

cent of the number employed in 1913, and these are engaged in repairing locomotives for the State and branch railways. The raw material for a few engines on order in 1914 was hidden and escaped the capacity of the invaders, and the completion of these engines, with a construction of a few others, form today all that the Belgium workshops are able to do in the matter of locomotive production.

Travel in Italy

Traveling in Italy is still far from being a pleasure, says a recent despatch from Rome to the Cleveland Plain Dealer. Trains are crowded and none too plentiful. The tourist in search of enjoyment is likely to arrive at his journey's end considerably dishevelled. A watchful eye must be kept on baggage. Nimble-fingered gentry have been known to lift all the portable possessions of a voyager during his brief absence in a dining car. Recently a British officer stepped out of his sleeping compartment at Rome minus all luggage and his tunic. They had been abstracted through the open window during a halt in the night. Tourists are still in the minority. Worried business men constitute the bulk of the traveling public. The Germans are creeping back slowly. The American "hustlers" are driven to despair. Those thus far met are making lightning trips to Italy and France for a rapid survey of the financial situation. They want to dart about as they do at home, but the slow trains madden them. The authorities make things as easy as possible. They are invariably courteous and helpful, but the regulations enforce slowness.

Travel by boat is an even greater trial. People wanting to go to Egypt find the fortnightly service from Taranto, Genoa and Naples inadequate to carry all who wish to cross. One company insists on half the passage money being forfeited if the ticket holders do not sail. Four British passengers, detained beyond sailing time by congestion on the railways, had to pay \$480 for the experience.

Italy suffers even more than her neighbors from lack of goods wagons. Needed imports pile up near the frontier and at seaports; factories cannot get raw materials. Paper money is everywhere. You accumulate handfuls of 5-lire notes (worth today about 2s. instead of 4s) and of smaller scraps of tattered, greasy currency marked one lira, which divide themselves into fragments in a most malignant fashion.

Yet, in spite of the topsy turviness of things, there is an atmosphere of real optimism in the business world. Merchants and bankers are fully alive to the dangers and difficulties of Italy's present situation, but they are striving earnestly to surmount them. Some of them say quite frankly that they see no hope of salvation in a German indemnity.

Exports of Car Wheels and Axles in December

The exports of car wheels and axles in December valued at \$452,781 were only slightly over half those of November and were the lowest for the year with one exception, January, 1919. France was the largest customer. The detailed figures compiled by the Division of Statistics of the Bureau of Foreign and Domestic Commerce are as follows:

EXPORTS OF CAR WHEELS AND AXLES IN DECEMBER

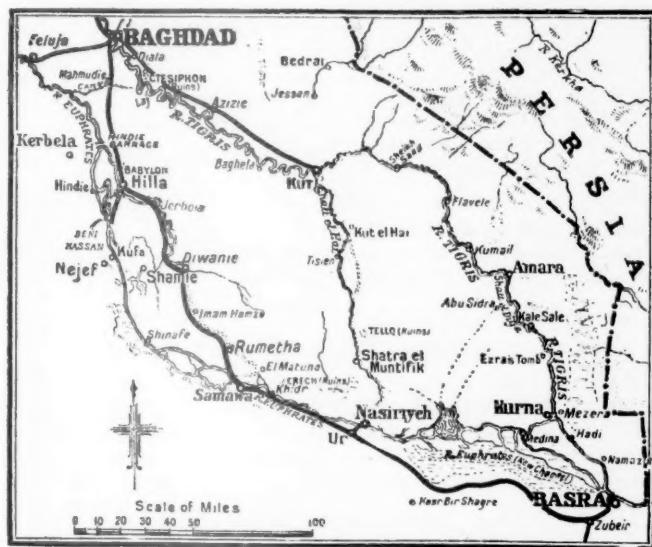
Countries	Dollars
France	164,537
Italy	69,230
Russia in Europe	2,399
England	50
Canada	16,668
Honduras	100
Mexico	4,393
Cuba	57,373
Dutch West Indies	18
Dominican Republic	1,556
Argentina	2,406
Bolivia	142
Brazil	29,963
Chile	4,826
Colombia	253
Peru	1,475
Venezuela	127
Japanese China	75,600
Dutch East Indies	5,308
Japan	12,461
Australia	511
Philippine Islands	64
British South Africa	3,260
Portuguese Africa	61
Total	452,781

Opening of Railroad from Persian Gulf to Bagdad

Press dispatches state that the first through train from Basra northwest to Bagdad, containing British military and civil officers and Arab sheiks left Basra at midnight on January 13 and arrived at Bagdad on the afternoon of January 15, where Lady Macmunn, in the presence of a large gathering, fixed the last fishbolt and declared the line open. The train then proceeded to Bagdad West Station. Basra is a river port 60 miles from the Persian Gulf.

In a speech, General Sir G. F. Macmunn stated that there were now 945 miles of railway in Mesopotamia, as compared with 1,113 miles during the war. This, he said, was due to the fact that operation on the unimportant lines had been abandoned and the track taken up.

The Times Engineering Supplement (London) states that construction has proceeded at the rate of a mile and a half a day on the section of railway between Ur Junction and Hilla, which forms the last link in this line. The route, which follows the Euphrates River, is made up of three sections: Basra westward to Ur Junction (130 miles), Ur Junction northwest to



From the Times (London)

The Railway from Basra to Bagdad

Hilla (164 miles), and Hilla north to Bagdad (58 miles). Of these three sections, the first and last were already in position.

The first section is of meter gage and is laid with 75-lb. rails on Indian broad-gage sleepers. The same construction was followed on the third section, which was built early in 1918. The line, however, is of standard gage. The Middle section (meter gage) is laid with 50-lb. rails and meter gage sleepers. The places on the line are Ur, Khidir, Samawa, Rumetha, Diwania, Jerboia, Milla. The largest bridge is at the crossing of the Euphrates about a mile above Samawa. It is a pile bridge with 13 spans of 30-ft. and a swing span of 40 ft. Other bridges include a 450 ft. pile bridge over the Suwair spill channel, a 56-ft. bridge with 18-ft. swing span over the Shuwait just below Rumetha, and a 120-ft. pile bridge with 38-ft. swing span across the Hilla Canal at Jerboia.

It is expected that a daily through passenger train each way will be put on, to run between Basra and Bagdad in 28 hours. Later as the roadbed consolidates there should be considerable improvement in the speed, but modern cars and engines will be needed, the purchase of which is now under consideration.

Nine Days' Railway Strike in Italy

LONDON.

The Italian State Railways have, as in the case of Great Britain, been put to the test of a railway strike which lasted 9 days beginning at 6 o'clock on the morning of January 20. It was a strike for increased wages, recognition of the railwaymen's union and shorter hours. Unlike Great Britain the response of the workers to the strike called was comparatively weak. It has been officially stated that throughout the entire railway system the number of men striking never reached 35 per cent. The

majority of these were in the North, particularly in the vicinity of Genoa. In the South the strike was generally acknowledged to be a failure.

The reported wage demands involved an increase of 70,000,000 lire with a minimum wage of 1,000 lire (\$200) a month.

From the first day of the strike, the number of trains operated increased, and the railway management was assisted by the work of volunteers and a number of men who remained loyal to the road. Difficulties were experienced, however, on account of the fact that of the strikers a large proportion of them were engineers and firemen. On the last day of the strike it was reported that 60 per cent of passenger traffic was being maintained and the amount of goods traffic was about 40 per cent of normal.

The settlement of the strike was, as reported from the Rome correspondent of the London Times, as follows:

- (1). The strikers return to work in their former positions.
- (2). The payments which would have been due to the railwaymen during the period of the strike will be paid into a housing fund for railwaymen.
- (3). An eight-hour day is accepted in principle and will come into force for engineers and firemen on April 30, for the train staff on June 30, and for other employees at a date to be fixed after consultation.
- (4). The railway board of management will settle the details of the eight-hour day in consultation with three representatives elected by each category of railwaymen.
- (5). The board of management will revise the scale of wage, fixing a flat rate, and doing away with the complicated system of allowance, with the exception of the allowance for the high cost of living.
- (6). The board of management will include five representatives elected by the railwaymen instead of three as heretofore.

The settlement may be considered a compromise. The men did not obtain all they asked for but they obtained a good deal. They failed, however, to force their demands for the recognition of the principal railwaymen's union.

Exports of Railway Track Material in December

Exports of railway track material in December included 2,061,818 lb. of spikes valued at \$79,188; 34,149 tons of rails valued at \$2,028,104, and switches, frogs, splice bars, etc., valued at \$344,652. The figures in detail as compiled by the Division of Statistics of the Bureau of Foreign and Domestic Commerce are as follows:

EXPORTS OF RAILWAY TRACK MATERIAL IN DECEMBER

Countries	Spikes		Steel rails		Switches, frogs, splice bars, etc.	Dollars
	Pounds	Dollars	Tons	Dollars		
Denmark			673	33,936	900	
France			431	17,790	2,500	
Greece			266	15,537	605	
Italy			470	24,454	5,614	
Netherlands			60	3,613	116	
Norway	5,200	202	72			
Portugal			677	39,386	72	
Russia in Europe			290	18,202	1,800	
Spain			119	7,648	6,962	
England			171	7,735	24,591	
Ireland			154	7,541	1,200	
British Honduras			263	13,593	2,789	
Canada	11,553	724	200	10,600	44	
Costa Rica	19,000	852	39	1,600	353	
Guatemala	5,550	297	66	3,391		
Honduras	1,000	46	171	10,466	17,216	
Nicaragua	400	24,441	158	7,541	1,200	
Panama	62,000	1,490	86	52,462	2,218	
Salvador	38,000	3,166	76	5,950	94,430	
Mexico	68,584	1,980	235	14,056	2,085	
Jamaica	768,780	11,349	838	250,400	87,233	
Haiti			536	27,098		
Dominican Republic	13,670	714	232	27,346		
Argentina	50,264	1,980	76	127,346	14,398	
Brazil	13,640	957	171	115,115		
Chile	40,800	1,460	17,216	12,274		
Colombia	22,348	615	158			
Ecuador	13,100	581	154			
Paraguay			263			
Peru	8,880	461	1,000	54,591	149	
Venezuela	500	27	86			
China	572,740	11,349	469	20,904	8,761	
Japanese China	4,100	336	92	6,494	159	
British India			836	50,741	2,150	
Dutch East Indies			2,329	126,000		
Hongkong	2,800	158	1,771			
Japan	168,285	6,769	10,496	660,263	12,274	
Russia in Asia			23	115,115		
Australia			1,300		5,824	
New Zealand					222	
Philippine Islands	13,214	405	653	31,913	3,876	
British South Africa	152,770	12,056	3,927	261,345	36,067	
Italian Africa			2,100	126,000		
Portuguese Africa	4,620	368	30	1,709	328	
Total	2,061,818	79,188	34,149	2,028,104	344,652	

Equipment and Supplies

Locomotive Deliveries, Week Ended January 31

The following new locomotives were shipped during the week ended January 31:

Works	Road	Number	Type
	Ft. W. & D. C.	5	Pacific.
Works		5	
Lima	Mich. C.	3	USRA 8 W. Sw.
Total		8	

Locomotives

THE CUBA RAILROAD is in the market for 10 4-6-0 type locomotives.

THE CHARLOTTE HARBOR & NORTHERN is inquiring for 3 locomotives.

THE CAMBRIA & INDIANA is inquiring for 1 Mikado type locomotive.

THE CHICAGO, MILWAUKEE & ST. PAUL is inquiring for 100 Mikado locomotives.

THE MIDLAND VALLEY has ordered 1 locomotive from the Baldwin Locomotive Works.

THE LOUISIANA & ARKANSAS has ordered two locomotives from the Baldwin Locomotive Works.

THE PAULISTA RAILWAY (Brazil) has ordered 6 locomotives from the Baldwin Locomotive Works.

THE ATCHISON, TOPEKA & SANTA FE will be in the market shortly for a considerable number of locomotives.

THE AMERICAN RAILWAY EQUIPMENT COMPANY, Liberty building, Philadelphia, Pa., is in the market for one 50-ton saddle tank locomotive.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for one second-hand standard gage 18- to 22-ton Mogul type locomotive.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for one second-hand standard gage oil burning switching engine of about 40 tons.

THE SOUTH BRAZIL LUMBER & COLONIZATION COMPANY, Rodney D. Chipp, United States agent, 120 Liberty street, New York, is in the market for 1 Mikado type locomotive for export to Brazil.

THE LOUISVILLE & NASHVILLE reported in the *Railway Age* of February 13 as being in the market for 20 Mikado type locomotives, has ordered 15 of these locomotives from the American Locomotive Company.

THE DELAWARE, LACKAWANNA & WESTERN has ordered 10 Mikado type locomotives from the American Locomotive Company. These locomotives will have 28 in. by 30 in. cylinders and a total weight in working order of 321,000 lb.

Freight Cars

THE ILLINOIS CENTRAL is inquiring for 1,000 gondola cars.

C. A. WORTMAN, San Antonio, Tex., is inquiring for six flat cars.

THE STANDARD OIL COMPANY OF INDIANA is inquiring for 6, 40-ton coal cars.

THE YUEH-HAN RAILWAY (China) is asking for prices on 1,000 freight cars.

THE MARLAND REFINING COMPANY, Ponca City, Okla., is inquiring for 200 tank cars.

THE ERIE has purchased 967, 50-ton hopper-car bodies from the Standard Steel Car Company.

THE SOUTH PORTO RICO COMPANY, New York, is inquiring for one 3,000-gal. capacity tank car.

THE CUBA RAILROAD is inquiring for 500 box cars of 40 tons capacity and 200 of 30 tons capacity.

THE AMERICAN REFRIGERATOR TRANSIT COMPANY, St. Louis, Mo., is inquiring for 2,028 refrigerator cars.

THE CARNEGIE STEEL COMPANY, Pittsburgh, Pa., has ordered 32, 50-ton, 12,500-gal. tank cars from the American Car & Foundry Company.

THE ANTONIO OLLER COMPANY, 180 Broadway, New York, has ordered 15 tank cars of 6,000 gal. capacity from the General American Tank Car Corporation for export to Cuba.

W. R. GRACE & Co., San Francisco, Cal., have ordered from the Pennsylvania Tank Car Company, 25, 8,050-gal. capacity tank cars with 50-ton trucks and equipped with steam heating coils.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for 6 second-hand 36-inch gage side dump cars for hauling ore, for Pacific coast delivery.

THE INLAND STEEL COMPANY, Chicago, reported in the *Railway Age* of January 16, as inquiring for 60 cars, has ordered 20, 70-ton gondola cars from the General American Tank Car Corporation.

THE AMERICAN RAILWAY EQUIPMENT COMPANY, Liberty building, Philadelphia, Pa., is in the market for some 50-ton steel hopper cars, some 40-ton flat cars, refrigerator beef cars, and 30-ton box cars.

THE SOUTH BRAZIL LUMBER & COLONIZATION COMPANY, Rodney D. Chipp, United States agent, 120 Liberty street, New York, is in the market for 15 logging cars of 60,000 lb. capacity for export to Brazil.

THE GEORGIA ROSIN & PRODUCTS COMPANY, Brunswick, Ga., has ordered from the Pennsylvania Tank Car Company 3, 8,050-gal. capacity tank cars with 40-ton trucks and equipped with steam heating coils.

THE BALDWIN LOCOMOTIVE WORKS, Philadelphia, Pa., is inquiring for 50, 10-ton freight cars for export to East Belgium and 10, 20-ton and 10, 10-ton gondolas, 5, 10-ton-capacity box cars, 1 baggage and mail car and 4 freight cars for export to Spain.

THE GREAT NORTHERN, reported in the *Railway Age* of January 30, as being in the market for 1,000 ore cars of 75-ton capacity, has ordered 500 of these cars from the Haskell & Barker Car Company and 500 from the American Car & Foundry Company.

Passenger Cars

THE PAULISTA RAILWAY (Brazil) is inquiring for 12 coaches.

THE HUDSON & MANHATTAN is in the market for 25 subway cars.

THE ST. LOUIS, BROWNSVILLE & MEXICO is inquiring for 50 passenger train cars.

THE BOSTON ELEVATED is inquiring for 30 center entrance street cars, 40 cars for elevated service and 30 standard safety cars.

THE NEW YORK CENTRAL is inquiring for 50 to 100 coaches, 50 to 100 baggage cars and 22 combination passenger and baggage cars.

THE UNITED RAILWAYS & ELECTRIC COMPANY, Baltimore, Md., has ordered 30 safety cars and 100 trailers from the J. G. Brill Company.

THE BALDWIN LOCOMOTIVE WORKS, Philadelphia, Pa., is inquir-

ing for 10, first-, second- and third-class passenger coaches for export to Spain.

THE NORTHERN OHIO TRACTION & LIGHT COMPANY, Akron, Ohio, has ordered through the Hodentyl-Hardy Company, New York, 117 safety cars from the J. G. Brill Company.

Iron and Steel

THE MT. VERNON CAR MANUFACTURING COMPANY, Mt. Vernon, Ill., has purchased 1,000 tons of plates for repairing Baltimore & Ohio freight cars.

THE ALASKA NORTHERN has awarded a contract to the American Bridge Company for 1,650 tons of structural material to be used in the erection of a bridge over the Susitna river, Alaska.

RAILS FOR SIAM.—The time limit for receiving bids for 31,977 metric tons of steel rails and permanent way accessories for the railways of Siam has been extended from January 31 to March 15. Tenders f. o. b. will be considered.

THE UNITED STATES RAILROAD ADMINISTRATION has awarded a contract to the American Bridge Company for 178 tons of through-plate, girder spans to be used in the reconstruction of an Illinois Central bridge at Center Grove, Iowa.

mitsui & Co., New York, reported in the *Railway Age* of January 16 as being in the market for steel transmission towers have ordered 5,600 tons of the above from the U. S. Steel Products Company for the Nippon Electric Hydro-electric & Power Company.

Machinery and Tools

THE MANITOBA BRIDGE & IRON WORKS, LTD., Winnipeg, Man., is inquiring for a 10-ton locomotive crane.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, is in the market for from 3 to 4 second-hand 150-ton wheel presses.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—A list of the requirements of machinery and tools for this company is being prepared and probably will be issued shortly.

THE A ESTRADA DE FERRO DE CARLOS BARBOSA A ALFREDO CHAVES, a state-owned railroad in Brazil, is inquiring for machine tools for railroad shops, such as lathes, drills, planers and hammers with electric drive; air compressors for painting and drilling, woodworking machinery, furnaces for melting iron, cranes, wrenches, centrifugal pumps, stationary steam engines, gasoline or kerosene engines, passenger coaches, railway motor cars, trucks, freight cars, box and flat cars, passenger and freight locomotives and other rolling stock.

Signaling

THE SOUTHERN (Western Lines) has placed an order with the Union Switch & Signal Company, Swissvale, Pa., for the necessary material for addition to a mechanical interlocking plant at Robins, Tenn. The interlocking is to take several functions located at the farther end of a tunnel adjacent to the present mechanical plant of low voltage style "M" switch and lock movements being used. The control of the derail and switch operating mechanism will be controlled from a single mechanical lever in the existing machine. The work will be installed by railroad forces.

Miscellaneous

SOPHUS BERENDSEN, 15 Broad street, New York, is in the market for about 25 copper firebox plates, for export to Denmark.

"TRANSPORTATION IS A VITAL PROBLEM for New England because its industrial life depends upon it. The reason that the railroads find themselves in straitened circumstances today is partly because they have been regulated and re-regulated by those with no responsibility."—Governor Coolidge of Massachusetts.

Supply Trade News

The Conley Car Company, Pittsburgh, Pa., has changed its name to the Conley Tank Car Company.

E. G. Middleton has been appointed advertising manager of the **Colburn Machine Tool Company**, Franklin, Pa.

A. G. Pickett, whose appointment as manager of the newly-organized railroad sales department of the **Imperial Belting Company**, Chicago, with office in that city, was announced in the *Railway Age* of February 13 (page 513), was born at New London, Mo., on July 12, 1888. In 1911 he became connected with the sales department of the National Refining Company, Hannibal, Mo. Later in the same year he was appointed special power plant representative for the H. W. Johns-Manville Company at New York. On January 1, 1916, he was promoted to assistant manager of the power specialties department and, in 1917, was promoted to manager of that department, which position he retained until August, 1919, when he resigned to become connected with the sales department of the Imperial Belting Company.

E. E. Griest, notice of whose appointment as general superintendent of the **Chicago Railway Equipment Company**, Chicago, with office at that city, appeared in the *Railway Age* of January 9 (page 214), was born at Zanesville, Ohio, on November 28, 1882. He entered railway service in 1899 as a clerk in the auditors' office of the Cleveland & Marietta at Cambridge, Ohio. This office was transferred to Pittsburgh in 1900 and he then entered the division freight agent's office at Cambridge as a clerk and messenger. Later in the same year he entered the employ of the Pittsburgh, Cincinnati, Chicago & St. Louis as an apprentice machinist in the Columbus (Ohio) shops, remaining in this capacity and later as a machinist until November, 1904, when he entered Purdue University, graduating in 1907. After some time spent in Alaska, he returned to the United States in 1907 as a designer in the engineering department of the Crucible Steel Company of America, Pittsburgh, Pa. In 1908 he was appointed foreman in the Hornell (N. Y.) shops of the Erie and later in the same year he was appointed assistant machine shop foreman in the Fort Wayne (Ind.) shops of the Pennsylvania, Lines West. On March 15, 1909, he was promoted to assistant master mechanic, with the same



A. G. Pickett



E. E. Griest

headquarters, and in January, 1915, he was promoted to master mechanic. He retained this position until 1918, when he resigned to become connected with the Chicago Railway Equipment Company, with headquarters at Chicago. In September, 1918, he was transferred to Detroit, Mich., remaining there until his recent promotion.

D. B. Wright, who has been a special representative with the **Lehon Company**, Chicago, for the past nine years, has severed his connection with that company, effective on March 1.

Harold McGill Davis, manager of the advertising department of the **Sprague Electric Works** of the General Electric Company, New York, since December, 1899, died on February 9 at his home in Brooklyn, N. Y.

J. A. McLennan, general superintendent of the Link-Belt Company, Philadelphia, Pa., has resigned to become general manager of the **McDonough Manufacturing Company**, Eau Claire, Wis., which has recently been reorganized and is now manufacturing machine tools.

Harry Z. Bixler, chief engineer of the Brier Hill Steel Company, Youngstown, Ohio, and **T. M. Phillips**, superintendent of the washed metals department of the same company, have resigned to enter the steel business as members of a new company now in the process of organization. **W. H. Ramage**, assistant chief engineer, has been promoted to succeed Mr. Bixler, and **E. J. Kauffman**, chief chemist, has been appointed to succeed Mr. Phillips.

The Blaw-Knox Company, Pittsburgh, Pa., has purchased the **C. D. Pruden Company**, Baltimore, Md., manufacturers of standardized steel buildings. **J. Grier Campbell**, purchasing agent of the Blaw-Knox Company, has become assistant treasurer of the C. D. Pruden Company, and **Wm. S. Boyd**, assistant purchasing agent of the Crucible Steel Company of America, Pittsburgh, Pa., and purchasing agent of the Page Steel & Wire Company, New York City, has been appointed purchasing agent of the Blaw-Knox Company, succeeding Mr. Campbell.

American Steel Foundries

The annual report of the American Steel Foundries for the year ending December 31, 1919, shows a surplus, after allowances were made for charges and federal taxes of \$4,210,634. After allowing for a three and one-half per cent preferred dividend for six months, this stock being issued in June, 1919, the balance was equal to \$7.55 a share (\$33.33 par value) earned on the \$17,184,000 of common stock, as compared with a surplus of \$4,695,727, or \$15.68 a share (\$100 par value), earned on the \$17,184,000 of capital stock in 1918. The income account for the year ended December 31, 1919, compares with past years, as follows:

	1919	1918	1917	1916
Operating earnings.....	\$6,107,825	\$4,442,237	\$8,718,296	\$4,842,237
Depreciation	333,296	426,412	917,646	739,414
Balance	\$5,774,529	\$4,015,825	\$7,800,650	\$4,102,823
Other income.....	340,478	173,599	238,024	122,987
Total income.....	\$6,115,007	\$4,189,424	\$8,038,674	\$4,225,810
Reserve .....	.....	.....	.....	344,000
Subsidiary Company minority earnings.....	219,103	136,497	219,235	1506,835
Interest charges.....	58,181	1,357,200	2,287,600	.....
Federal tax reserve.....	1,627,089	.....	.....	.....
Surplus	\$4,210,634	\$2,695,727	\$5,531,839	\$3,374,975

*After deducting manufacturing, selling, administrative, head and district office expenses.

†Consists of net earnings of subsidiary company apportioned to outstanding minority stockholders.

‡Standing sinking fund.

The probability of a stock dividend on the common stock in the near future is intimated in a statement made by President R. T. Lamont. Mr. Lamont, in his announcement, says: "Through the payment, from earnings, of its bonds and most of its debentures, as well as from extensions and additions to plants, the company has accumulated a large surplus, which, since it represents money spent, cannot be distributed in cash without reducing the working capital to

less than the amount required for the conduct of the business. It may, however, very properly be capitalized through the issuance of stock, which, in turn, may be either distributed to the stockholders as a stock dividend or used for the acquisition of additional property. Personally, I believe, unless some good reason to the contrary should develop, that the new stock might well be distributed as a dividend, at say, five or ten per cent a year over the next few years, irrespective of any cash dividends that may be paid.

Westinghouse Air Brake Company

In addition to the appointments announced in the *Railway Age* of last week, the Westinghouse Air Brake Company, Pittsburgh, Pa., has also made the following change in its engineering staff: **F. H. Parke**, resident engineer, southeastern district, Pittsburgh, Pa., has been promoted to general engineer with headquarters at the same place; **T. W. Newburn**, assistant resident engineer, southern district, at Pittsburgh, has been promoted to district engineer of the same district with headquarters at Washington, D. C.; **J. H. Woods** of the commercial engineering department at Wilmerding, Pa., has been promoted to engineer of the export department with headquarters at Pittsburgh, and **J. C. McCune**, special engineer at Wilmerding, has been appointed assistant to district engineer, eastern district, with headquarters at New York.

F. H. Parke, who has been promoted to general engineer with office at Pittsburgh, Pa., was born in 1869 at Waterloo,

connected first with the Cleveland office, with duties connected with mechanical and commercial work, then with the Columbus office as mechanical expert in connection with electric railway brakes. In 1914 he was assigned to the Pittsburgh office as assistant resident engineer, where he leaves to take up his new duties.

Joseph H. Woods, who has been promoted to engineer of the newly arranged export department, was born in February, 1886, at Hamilton, Ont. After graduating from the public schools and Hamilton Collegiate, he was employed as an apprentice in a machine shop, where he served three years as apprentice-machinist and then entered the mechanical drawing room of the Canadian Westinghouse Company, Ltd. In 1908 he was transferred to the air brake department. The following year he entered the engineering test department and in 1911 was appointed assistant engineer of tests. In 1915 he was transferred temporarily to New Jersey as general foreman of the Air Brake Company's shrapnel loading plant, where war munitions were being manufactured. On completion of the shell loading work in 1916 he returned to Wilmerding to take up duties in the general office division of the engineering department.

Jos. C. McCune has been appointed assistant to district engineer with office in New York. He was born in Brilliant, Ohio, in 1890. He attended the high school at Steubenville, Ohio, and in 1906 entered Washington and Jefferson College, taking preparatory work for one year. He graduated from Cornell University with the class of 1911, receiving the degree of mechanical engineer. He was awarded the First



F. H. Parke



T. W. Newburn



J. H. Woods



J. C. McCune

N. Y. He was educated in the public schools at Binghamton, N. Y., until eleven years of age, when he went to St. John's School, Manlius, for seven years, where he prepared for a course at Cornell University. He was graduated from Cornell in mechanical engineering in 1892. He immediately entered the service of the Westinghouse Machine Company at Pittsburgh, Pa., first as draftsman and afterwards as engineer of tests. In 1898 he took service with the Westinghouse Air Brake Company, spending the first four years in Petrograd, assisting in the installation of the Westinghouse Air Brake plant being erected there to handle the Russian railway business. Returning to the home office at Wilmerding, Pa., he was given charge of the publicity department and afterwards was made industrial engineer, in which capacity he served until 1911. He was then made resident engineer of the southeastern district.

T. W. Newburn, who becomes district engineer of the southeastern district with office at Washington, D. C., was born near Hoopston, Ill., and received his early education in the country schools and at Greer College. He was graduated from Purdue University with the 1902 class in mechanical engineering and immediately entered the service of the Cambria Steel Company, Johnstown, Pa. In August, 1902, he entered the employ of the Westinghouse Air Brake Company, being assigned duties in the mechanical and engineering departments of its Wilmerding factory. He was con-

Sibley Prize for having the highest scholastic standing of the students in Sibley College of Mechanical Engineering. After graduating, he entered the employ of the Cutler-Hammer Manufacturing Company, Milwaukee, Wis., and later served in the traffic department of the Pittsburgh Railway Company. In 1913 he joined the Westinghouse Air Brake Company as assistant to the chief engineer, Dr. Walter V. Turner. In 1915 he was transferred to the New York office as mechanical expert, charged with the development and satisfactory operation of the new air brake equipment then being applied to the subways of Greater New York. In 1916 he served for five months at the Mexican border with the 7th Regiment, N. Y. N. G. Returning from this service he was commissioned 1st Lieut. in the Engineer Officers' Reserve Corps and upon the outbreak of the war with Germany was ordered to active duty. He was an engineering instructor at the 1st, 2d and 3d Officers' Training Camps, and in May, 1918, was assigned to the 603d Engineers, going overseas with this organization and remaining abroad for ten months. Before the signing of the armistice, he participated in the Argonne offensive as a pontoonier with the First Army, being occupied in building pontoon bridges at Dun, Stenay and other places which have since become historic. Returning to this country, he re-entered the employ of the Westinghouse Air Brake Company as special engineer at Wilmerding.

Annual Report of Baldwin Locomotive Works Shows Decreased Business

The fact that the railways of the United States purchased practically no new locomotives in 1919 is reflected in the decrease of gross sales of the Baldwin Locomotive Works from \$123,179,252 for the fiscal year ended December 31, 1918, to \$84,307,777 for the year 1919. This total of \$84,307,777 for 1919 is greater than that of 1916 or any preceding year, but it is considerably below 1917 and 1918, when the company was able to depend upon war orders for a large share of its business.

The company's manufacturing profit of \$8,842,242 in 1919 compared with \$18,262,112 in 1918 and with \$11,193,841 in 1917. There was other income amounting to \$1,103,430 and the profit after the deduction of taxes, interest, etc., was \$8,871,243. Deductions for reserves, namely reserve for depreciation, reserve for depreciation in accounts and reserve for federal taxes totaled \$3,095,000, leaving a net profit available for dividends of \$5,776,243. This compared with a similar figure for 1918 of \$5,752,292, but in 1918 the total deductions for reserves totaled \$15,009,817 as against the figure only one-fifth as large this year. One of the principal reductions in allowances for reserves was for taxes, \$6,500,000 being set aside for this purpose in 1918 as against only \$2,000,000 in 1919.

The usual dividends of 7 per cent amounting to \$1,400,000, were paid on the preferred stock. No dividends on the common stock were paid in 1918, but in 1919 3½ per cent was paid, totaling \$700,000. The surplus for the year 1919 totaled \$3,676,243 as compared with \$1,852,296 in 1918, or \$6,905,722 in 1917. The total surplus on December 31, 1919, was \$6,554,413, as against \$1,907,642 at the close of 1918.

The general balance sheet for the Baldwin Locomotive Works as of December 31, 1919, is shown in brief as follows:

Assets	
Plant and equipment	\$17,022,568
Machinery and fixtures	13,673,589
Less depreciation	\$30,696,157
	3,650,000
	\$27,046,157
Investments—	
Standard Steel Works	\$4,041,501
Eddystone Munitions Company	484,736
Chicago plant	365,850
Dwelling houses	40,618
	\$4,932,705
Current Assets—	
Inventories	\$10,565,622
Accounts receivable	7,323,502
Bills receivable	1,799,633
Marketable securities	633,621
Liberty bonds	7,046,457
British bonds	962,500
Cash	3,441,020
	\$31,772,355
Deferred charges—	
Engineers, etc.	\$37,179
Advances to agents	58,992
	\$96,171
Sinking fund—	
First mortgage bonds	1,141,900
	\$64,989,288
Capital stock—	
Preferred	\$20,000,000
Common	20,000,000
	\$40,000,000
First mortgage bonds	10,000,000
Current liabilities—	
Accounts payable	\$2,085,118
Depositors saving fund	1,666,097
Special deposit	1,293,972
Russian deposit	250,000
Advances	109,897
	\$5,405,084
Interest—	
Accrued interest on bonds	\$83,334
Interest received in advance	66,557
Interest in sinking fund	129,900
	\$279,791
Reserves—	
Income taxes, 1919	\$2,000,000
Depreciation in accounts	750,000
	\$2,750,000
Surplus—	
Balance, December 31, 1919	\$6,554,413
	\$64,989,288

Railway Officers

Railroad Administration Regional

R. H. Aishton, regional director of the Northwestern region, has had his jurisdiction extended over the Central Western region, succeeding **Hale Holden**, resigned.

Federal and General Managers

H. A. Hinshaw, general freight agent of the Southern Pacific, with office at Portland, Ore., has also been appointed assistant to the federal manager, with the same headquarters.

Operating

G. T. Washington, superintendent of terminals of the Southern and the New Orleans Terminal at New Orleans, La., has been transferred to his former position as local freight agent of the Southern, with the same headquarters, succeeding **E. R. Lockhart**, who has been appointed assistant local freight agent at that point. **C. C. Chambers**, freight conductor on the New Orleans & Northeastern, has been promoted to superintendent of terminals to succeed Mr. Washington.

Special

Thomas M. Pierce, whose election to the acting presidency of the Terminal Railroad Association of St. Louis, with headquarters at St. Louis, Mo., was announced in the *Railway Age* of February 6 (page 462), was born at Union City, Tenn., on July 18, 1877. He was educated at Georgetown University, Washington, D. C., and the Cumberland (Tenn.) University of Law.

He entered railway service in 1905, when he was appointed general counsel for the St. Louis & Suburban. In 1907 he was appointed general counsel for the United Railways of St. Louis, continuing in that position until 1911, when he was appointed general counsel for the Terminal Railroad Association of St. Louis.

He succeeds **William S. McChesney**, whose death on January 28 was noted in the *Railway Age* of February 6 (page 462).

Traffic

W. C. Roth has been appointed general agent of the Chicago Great Western, with headquarters at Mason City, Ia., succeeding **R. M. Hatfield**, transferred.

T. R. Flanagan, property protector on the Chicago Great Western, with office at St. Paul, Minn., has been appointed general freight agent, with the same headquarters, succeeding **C. L. Smith**, deceased. The office of property protector has been abolished.

Samuel Strachan has been appointed division freight agent of the Baltimore & Ohio, the Baltimore & New York, the Staten



Thos. M. Pierce

Island Rapid Transit, the Coal & Coke, the Dayton & Union, the Dayton Union and the Morgantown & Kingwood, with headquarters at Charleston, W. Va., succeeding S. J. Lamoreux, resigned.

Engineering and Rolling Stock

V. K. Hendricks, assistant chief engineer of the St. Louis-San Francisco, has resigned, effective on March 1. No successor has as yet been appointed.

An item appearing in the *Railway Age* of January 30 (page 396) was incorrect in that it stated that **E. G. Lane** was chief engineer of the Baltimore & Ohio, Eastern Lines. **H. A. Lane** is chief engineer of the Baltimore & Ohio, Eastern Lines, and he has had his jurisdiction extended over the Western Lines while retaining the same headquarters at Baltimore, Md. **E. G. Lane**, chief engineer of the Western Lines, has returned to his former position as engineer maintenance of the way of the Western Lines, with headquarters at Cincinnati, Ohio.

Corporate

Executive, Financial, Legal and Accounting

G. W. Wickersham has been appointed counsel for the Louisville & Nashville Railroad Company, with headquarters at New York, effective March 1.

B. F. Bush, regional director of the Southwestern Region, will resume his former position as president of the Missouri Pacific Railroad Company on March 1.

Lawrence A. Downs, assistant general manager of the Illinois Central, the Yazoo & Mississippi Valley and the Chicago, Memphis & Gulf, with headquarters at Chicago,

has been elected vice-president and general manager of the Central of Georgia, with headquarters at Savannah, Ga., succeeding to the position held by L. W. Baldwin prior to government control, which has since been vacant. Mr. Downs was born at Green-castle, Ind., on May 9, 1872, and graduated from Purdue University in 1894. In 1895 he began railway work with the Vandalia. From March, 1896, to 1898, he was a member of an engineering party of the Illinois Central. From 1898 to March,

1907, he served as roadmaster on the Amboy, the Louisville, the Louisiana, the Springfield and the Chicago divisions of the same road. In March, 1907, he was appointed assistant chief engineer, maintenance of way, remaining in that position until December 6, 1910, when he was promoted to superintendent of the Kentucky division. On November 1, 1915, he was promoted to general superintendent of all lines south of the Ohio river, with headquarters at New Orleans, La. On August 1, 1917, he was transferred to Chicago as general superintendent of the Northern lines. He continued in that position until January, 1919, when he was promoted to assistant general manager, in which capacity he served until his recent appointment.

A. J. Pharr, federal auditor of the Louisville & Nashville, has been appointed controller for the Louisville & Nashville Railroad Company, with headquarters at Louisville, Ky., effective March 1.

Leo C. Van Laan has been appointed auditor of the Detroit, Bay City & Western and the Port Huron Southern, with headquarters at Bay City, Mich.

Hale Holden, regional director of the Central Western region, has resigned, effective February 15, having been elected president of the Chicago, Burlington & Quincy and the Colorado & Southern, the positions he held prior to federal control.

A. R. Smith, traffic assistant of the Southern region for the Railroad Administration, has been elected vice-president in charge of traffic of the Louisville & Nashville, with headquarters at Louisville, Ky., effective March 1, the position he held prior to federal control.

Thomas C. Powell who has recently resigned as director of the Division of Capital Expenditures of the Railroad Ad-

ministration, and has been elected vice-president in charge of traffic of the Erie Railroad Company, effective February 15, was born September 5, 1865 at Cincinnati, Ohio. He began railroad work in 1884 as traffic mail clerk of the Cincinnati, New Orleans & Texas Pacific and later became successively rate clerk, chief rate clerk and chief clerk to the traffic manager of the same road. On June 1, 1893, he was appointed assistant general freight agent, retaining the position until November 1, 1895, when he went to the Southern as chief clerk to the

Thos. C. Powell

general freight agent, in charge of the rate and tariff department. Having served in that capacity for almost three years, he was appointed general freight agent of the same road and the Northern Alabama. Less than a year later he was promoted to assistant freight traffic manager of the same roads and on March 15, 1902, to freight traffic manager, a position he held until April 1, 1905, when he was elected vice-president in charge of traffic. On August 1, 1907, he was also elected vice-president in charge of all departments of the Cincinnati, New Orleans & Texas Pacific and the Alabama Great Southern, later holding the position of vice-president of the Southern Railway, Lines West, at Cincinnati, Ohio, in charge of traffic. Soon after war was declared with Germany he was appointed manager of inland traffic of the War Industries Board and in January, 1919, succeeded Judge Robert S. Lovett as director of the Division of Capital Expenditures of the Railroad Administration. He also served as chairman of the Claims Committee.

Frank B. Townsend, traffic manager of the Minneapolis & St. Louis and the Iowa Central, with office at Minneapolis, Minn., has been re-elected vice-president in charge of traffic of these roads, effective January 15. Mr. Townsend held this position prior to federal control.

A. G. Sam, president of the Live Stock National Bank, the Sioux City Cattle Loan Company, and treasurer of the Sioux City Stock Yards Company, with office at Sioux City, Ia., has been elected treasurer and a director of the Sioux City Terminal Railway Company, with the same headquarters.

B. L. Bugg, federal manager of the Atlanta, Birmingham & Atlantic, and, prior to federal control, general manager, has been elected president of the Atlanta, Birmingham & Atlantic Railroad Company; **J. L. Edwards**, manager of the Agricultural Section of the Railroad Administration, and prior to federal control, traffic manager of the Atlanta, Birmingham & Atlantic, has been elected vice-president; **W. E. Paschall** has been elected



L. A. Downs

treasurer, and **A. V. B. Gilbert**, secretary. These officers assume their new duties at the termination of federal management.

G. E. Evans, staff officer of the Louisville & Nashville for the Railroad Administration, has been elected vice-president in charge of operation of the Louisville & Nashville Railroad Company, with headquarters at Louisville, Ky., effective March 1, the position he held prior to federal control.

F. O. Barden, general manager of the Boyne City, Gaylord & Alpena, with office at Boyne City, Mich., has been elected third vice-president, with the same headquarters. **L. H. White**, general superintendent and car accountant, has been promoted to succeed Mr. Barden as general manager.

J. M. Gruber, prior to federal control vice-president in charge of operation of the Great Northern with headquarters at St. Paul, Minn., and now general manager of the same road, has resigned from the former position effective March 1. He will be succeeded by **C. O. Jenks**, assistant federal manager of the Great Northern.

The statement in last week's issue of the *Railway Age* to the effect that **L. W. Baldwin**, regional director of the Allegheny district, would return to his former position as vice-president and general manager of the Central of Georgia on the termination of federal control, was incorrect. Mr. Baldwin will become vice-president in charge of operation of the Illinois Central and the Yazoo & Mississippi Valley, as correctly stated in the following items.

Lewis W. Baldwin, regional director of the Allegheny region of the United States Railroad Administration, has been elected vice-president in charge of operation of the Illinois Central and the Yazoo & Mississippi Valley,

with office at Chicago, effective March 1. Mr. Baldwin was born at Waterbury, Md., in 1875 and was graduated from Lehigh University in 1896. He entered the service of the Illinois Central in that year and was soon promoted to assistant engineer. In 1900 he was appointed supervisor of track and for three years, from 1901 to 1904, he served in the capacity of roadmaster. Later he was promoted to trainmaster and in 1906 was made superintendent. In 1910 he

was appointed engineer maintenance of way, with headquarters at Chicago. Three years later he was appointed superintendent of the Kentucky division. In January, 1915, he was promoted to general superintendent of the Southern Lines of the Illinois Central, with headquarters at New Orleans, La. On November 15, 1915, he was made general manager of the Central of Georgia and one year later was elected vice-president of the same road. He entered the service of the Railroad Administration in February, 1918, as operating assistant to the director of the Southern region, with office at Atlanta, Ga., and was later transferred with C. H. Markham, then regional director, to the Allegheny region, continuing in that position until November, 1919, when, upon the resignation of Mr. Markham, he was promoted to the position which he held at the time of his recent appointment.

Charles O. Jenks, assistant federal manager of the Great Northern, with headquarters at St. Paul, Minn., has been elected vice-president in charge of operation of the Great Northern Railway Company, with the same headquarters, succeeding to the position held prior to federal control by **J. M. Gruber**, now general manager of the Great Northern, with

headquarters at St. Paul, effective March 1. Mr. Jenks was born at St. Paul, Minn., on March 6, 1874. He was educated at the University of North Dakota and entered railway service on June 15, 1891, as a clerk in the superintendent's office of the Great Northern. He was subsequently, to October 1, 1906, chief clerk, trainmaster, assistant superintendent and superintendent on various divisions of the same road. On the latter date he became president and general manager of the Nelson-Jenks Coal Company, Great Falls, Mont. He returned to railway service on December 1, 1909, as superintendent of the Butte division of the Great Northern. On March 15, 1912, he was promoted to general superintendent of the Central district of the same road, with headquarters at Great Falls, and was transferred to the Lake district, with headquarters at Superior, Wis., on July 20, 1913. In January, 1915, he was appointed general manager of the Spokane, Portland & Seattle, with headquarters at Portland, Ore., and in May of the same year was elected a member of the board of directors, and vice-president and general manager of the Spokane & Inland Empire. At the same time he was elected vice-president and general manager of the Pacific & Eastern, with jurisdiction over the operating, mechanical and purchasing departments, and vice-president of the Oregon Electric. Mr. Jenks was later appointed assistant general manager of the Great Northern, with headquarters at St. Paul, and in October, 1917, he was transferred to Seattle, Wash., with jurisdiction over the lines west of Williston, N. D. He continued in this position until February, 1920, when he was promoted to assistant federal manager, with headquarters at St. Paul, in which position he will continue until March 1.

Operating

G. H. Greenaway has been appointed trainmaster of the Detroit, Bay City & Western and the Port Huron Southern at Port Huron, Mich.

Robert S. Parsons, chief engineer of the Erie, has been appointed general manager of the Erie, under the new plan of organization whereby there are created four regions, each with a regional manager reporting to the general manager. Mr. Parsons was born at Hohokus, N. J., and studied at Rutgers College. He began railroad work in 1895 as rodman for the Erie and the following year was made assistant engineer. In 1899 he was appointed division engineer of the New York, Susquehanna & Western. He returned to the Erie in 1903 as engineer maintenance of the way and three years later became assistant general superintendent of the same road. He was appointed superintendent of the Susquehanna division in 1907 and three years later was transferred to the New York division in the same capacity. On January 1, 1913, he was appointed assistant general manager of the lines east of Buffalo, N. Y., and Salamanca, with headquarters at New York. The following year he was appointed general manager of the Ohio Grand division, more recently known as the Erie Lines West, with office at Cleveland, Ohio, and in January, 1916, was appointed chief engineer. The following year he became assistant to the president and chief engineer and in November, 1917, became assistant to the president and general manager. Under the Railroad Administration he served as chief engineer, as noted above.

A. C. McDannel, assistant to the president of the Detroit, Bay City & Western, with headquarters at Bay City, Mich.,



L. W. Baldwin



R. S. Parsons

has been appointed general superintendent and traffic manager of that road and of the Port Huron Southern, with the same headquarters.

F. E. Pinkerton has been appointed superintendent of car service of the Detroit, Bay City & Western and the Port Huron Southern, with headquarters at Bay City, Mich.

F. J. Beals, assistant car accountant of the Boyne City, Gaylord & Alpena, with office at Boyne City, Mich., has been promoted to superintendent of car service, with the same headquarters, succeeding to part of the duties of L. H. White, promoted. The position of assistant car accountant has been abolished.

Traffic

F. D. Gouldburg has been appointed general freight and passenger agent of the Detroit, Bay City & Western and the Port Huron Southern, with headquarters at Bay City, Mich.

J. M. Cleaveland, general freight and passenger agent of the Pere Marquette Line Steamers, with headquarters at Milwaukee, Wis., has been elected vice-president and traffic manager.

D. M. Goodwyn, traffic manager of the Louisville & Nashville for the Railroad Administration, has been appointed freight traffic manager of the Louisville & Nashville Railroad Company, with headquarters at Louisville, Ky., effective March 1.

C. C. Ray, general freight and passenger agent of the De Queen & Eastern, and the Texas, Oklahoma & Eastern, with office at De Queen, Ark., has been appointed assistant gen-

positions and headquarters on the termination of federal control:

E. S. Jouett, general counsel, Louisville, Ky.

J. H. Ellis, (federal) treasurer, Louisville, Ky.

B. M. Starks, general manager, Louisville, Ky.

W. A. Russell, passenger traffic manager, Louisville, Ky.

H. T. Shanks, purchasing agent, Louisville, Ky.

Other appointments on this road, to take effect on the termination of federal control, are announced elsewhere in these columns.

THE PENNSYLVANIA RAILROAD CHANGES

The four newly-elected regional vice-presidents of the Pennsylvania system are **Elisha Lee**, **R. L. O'Donnell**, **J. G. Rodgers** and **Benjamin McKeen**.

Elisha Lee was born September 24, 1870, in Chicago. He is a graduate of the Massachusetts Institute of Technology, class of 1892, and began railroad work as soon as he finished college as rodman in the engineering department of the Tyrone division of the Pennsylvania. He was out of railroad service from 1895 to 1897. He then returned to the Pennsylvania and in April, 1899, was made an assistant supervisor. Two years later he was promoted to supervisor, and in August, 1902, was made assistant engineer of maintenance of way. In 1907 he was appointed principal assistant engineer of the Philadelphia, Baltimore & Washington, and two years later was made superintendent of the New York, Philadelphia & Norfolk. March 3, 1911, he was made assistant to the general manager of the Pennsylvania Lines East and during federal control has been federal manager of the Pennsylvania Lines East.

Richard Lincoln O'Donnell was born November 5, 1860, in Philadelphia. He attended the Philadelphia High School and



Elisha Lee



R. L. O'Donnell



J. G. Rodgers



B. McKeen

eral manager and traffic manager of these roads, with the same headquarters, succeeding to positions which have been vacant for some time.

Engineering and Rolling Stock

R. R. Herrick has been appointed master mechanic of the Detroit, Bay City & Western and the Port Huron Southern at Bay City, Mich.

William N. Boyd has been appointed chief engineer of the Detroit, Bay City & Western and the Port Huron Southern, with headquarters at Bay City, Mich.

C. D. Kinney, master mechanic on the Boyne City, Gaylord & Alpena, with office at Boyne City, Mich., has been promoted to superintendent of motive power, with the same headquarters.

General

The Louisville & Nashville Railroad Company announces that the following officers now serving the Louisville & Nashville under the Railroad Administration will retain the same

the Polytechnic College at Philadelphia, graduating in 1882 and at once beginning railroad work as rodman on the Cornwall & Lebanon, a part of the Pennsylvania. He worked as rodman, levelman and transitman and in 1884 went into the assistant engineer's office at Blairsville, Pa., as draftsman. Two years later he was made assistant engineer in the principal assistant engineer's office at Altoona, Pa., and in the following March was made assistant supervisor of the Altoona division. In February, 1888, he was transferred as assistant supervisor to the Philadelphia division and in August, 1889, was transferred to the Pittsburgh division. He worked as assistant supervisor at New Florence, Pa., until November, 1889, and then was promoted to supervisor at the Altoona yard. In April, 1891, he was appointed assistant engineer of the Tyrone division and in 1894 was transferred as assistant engineer to the Pittsburgh division. In 1897 he was appointed assistant superintendent of the Pittsburgh division and in 1902 was promoted to superintendent. In January, 1903, Mr. O'Donnell was made general superintendent of the Buffalo & Allegheny Valley division and in March, 1911, was appointed general superintendent of the Western Pennsylvania division. During federal control he has been general manager of the Pennsylvania Lines East with office at Philadelphia.

J. G. Rodgers was born in 1863 and attended the Lewistown

Academy. He began railroad work in 1882 as rodman on the Pennsylvania and was then appointed as assistant engineer of construction. He was made assistant to the chief engineer and later made assistant supervisor of the New York, Philadelphia & Norfolk. He was promoted to supervisor and then superintendent of this road, and in March, 1909, was made assistant to the general manager of the Pennsylvania Lines East. In 1911 he was made general superintendent of the Northern division of the Pennsylvania with office at Buffalo, and during federal control he has been assistant to the president of the corporation with office at Philadelphia.

Benjamin McKeen was born January 23, 1864, at Terre Haute, Ind. He is a graduate of the Rose Polytechnic Institute and in 1885 received the degree of M.E. He began railroad work as draftsman in the office of the superintendent of motive power of the Terre Haute & Indianapolis, part of the Vandalia, but in 1886 became rodman on the engineering corps of the Pennsylvania. Later in the same year he was made resident engineer in charge of construction work on the Terre Haute & Logansport, part of the Vandalia, and in the following January was made engineer of maintenance of way of the Logansport division. In 1889 he acted also as chief engineer of construction in the completion of the Indiana & Lake Michigan. In January, 1894, Mr. McKeen was made superintendent of the Peoria division of the Terre Haute & Indianapolis and was made superintendent of the main line division of that road in 1901. In the following year he was made superintendent of the Chicago Terminal division of the Pennsylvania Lines West and in December, 1903, was appointed general manager of the Terre Haute & Indianapolis, now the Vandalia. In January, 1913, he was made general manager of the Pennsylvania Lines West and during federal control he was vice-president and engineer of the corporation for the Pennsylvania Lines West.

Elsewhere in this issue will be found an article covering the changes in the Pennsylvania Railroad organization whereby there are created four regions each in charge of a vice-president. In the following list will be found the names of the officers who have been appointed to conduct the business of the railroad under the new plan of organization. The appointments were approved by the board of directors on February 11, and become effective March 1.

The list gives the names of the officers, their new titles and positions and their headquarters.

EXECUTIVE DEPARTMENT

Name	Title	Headquarters
Samuel Rea.....	President	Philadelphia.
W. U. Moyer.....	Asst. to the pres.	Philadelphia.
James J. Turner.....	V.-p. (corp. wk., cos. w. of Pitts.)	Pittsburgh.
C. M. South.....	Asst. to the v.-p.	Pittsburgh.
B. B. Young.....	Asst. to the v.-p.	Pittsburgh.
W. W. Atterbury.....	V.-p. in charge of operation	Philadelphia.
George D. Dixon.....	V.-p. in charge of traffic	Philadelphia.
Henry Tatnall.....	V.-p. in charge of finance	Philadelphia.
A. J. County.....	V.-p. in charge of accounting	Philadelphia.
George J. Adams.....	Asst. to v.-p. in chge. accounting	Philadelphia.
M. C. Kennedy.....	V.-p. in chge. real est., pur. & ins.	Philadelphia.
G. L. Peck.....	V.-p. in charge of personnel	Philadelphia.
Lewis Neilson.....	Secretary	Philadelphia.
S. H. Church.....	Secretary	Pittsburgh.
J. W. Marshall.....	Asst. secretary	New York.
H. T. Wilkins.....	Asst. secretary	Philadelphia.
J. L. Mason.....	Asst. secretary	Pittsburgh.
E. H. Brown.....	Asst. to the secretary	Philadelphia.

TRANSPORTATION DEPARTMENT

Under the supervision of W. W. Atterbury, vice-president in charge of operation.

System Officers

Name	Title	Headquarters
C. M. Sheaffer.....	Chief of transportation	Philadelphia.
J. F. Deasy.....	Asst. chief of trans.—freight	Philadelphia.
S. M. Rankin.....	Asst. chief of trans.—passenger	Philadelphia.
E. T. Kennan.....	Supt. of car service	Philadelphia.
G. A. Cellar.....	Gen. supt. of telegraph	Philadelphia.
J. T. Wallis.....	Chief of motive power	Philadelphia.
P. F. Smith.....	Works manager	Altoona.
J. R. Black.....	Shop accountant	Altoona.
R. L. Kleine.....	Asst. chief of mot. power—car	Altoona.
F. W. Hankins.....	Asst. chief of mot. power—loco	Altoona.
G. M. Ellsworth.....	Motive power accountant	Altoona.
A. W. Gibbs.....	Chief mechanical engineer	Philadelphia.
E. W. Smith.....	Engineer of transportation	Philadelphia.
A. C. Shand.....	Chief engineer	Philadelphia.

E. B. Temple.....	Asst. chief engineer	Philadelphia.
R. Trimble.....	Asst. chief engineer	Pittsburgh.
J. F. Murray.....	Asst. chief engineer	Philadelphia.
S. A. Sloan.....	Asst. to the chief engineer	Philadelphia.
George Nauman.....	Asst. to the chief engineer	Philadelphia.
E. G. Ericson.....	Asst. to the chief engineer	Pittsburgh.
N. F. Brown.....	Asst. to the chief engineer	Philadelphia.
H. C. Crowell.....	Asst. to the chief engineer	Pittsburgh.
H. R. Leonard.....	Engineer bridges and buildings	Philadelphia.
J. C. Bland.....	Engineer bridges and buildings	Pittsburgh.
R. Farnham.....	Asst. engineer bridges and bldgs.	Philadelphia.
W. L. Smith.....	Asst. engineer of bridges	Pittsburgh.
J. F. Leonard.....	Asst. engineer of bridges	Pittsburgh.
W. W. Priest.....	Asst. engineer of bridges	Pittsburgh.
W. H. Cookman.....	Architect	Philadelphia.
G. W. Whiteman.....	Chief inspector	Philadelphia.
C. A. Preston.....	Valuation engineer	Philadelphia.
W. C. Cushing.....	Engineer standards and valuation	Philadelphia.
J. W. Stone.....	Asst. valuation engineer	Philadelphia.
A. H. Rudd.....	Chief signal engineer	Philadelphia.
F. H. Buchanan.....	Asst. chief signal engineer	Pittsburgh.
James Young.....	Asst. engineer	Philadelphia.
R. R. Nace.....	Asst. engineer	Philadelphia.
Percy D. Brown.....	Asst. engineer	Philadelphia.

Regional Officers

The operations of the Pennsylvania System will be conducted under organization units in four regions, viz.: Eastern, Central, Northwestern and Southwestern.

EASTERN REGION

Extending from New York on the east to Altoona, inclusive, on the west and Washington on the south.

Name	Title	Headquarters
Elisha Lee.....	Vice-president	Philadelphia.
C. S. Krick.....	General manager	Philadelphia.
R. V. Massey.....	Asst. gen. mgr.	Philadelphia.
Frank C. Hoff.....	Asst. to the gen. mgr.	Philadelphia.
J. C. Johnson.....	Gen. supt. of transportation	Philadelphia.
R. C. Morse, Jr.....	Supt. of freight transportation	Philadelphia.
John E. Burrell.....	Supt. of passenger transportation	Philadelphia.
F. W. B. Hulmes.....	Supt. of stations and transfers	New York.
W. G. Coughlin.....	Chief engr., maintenance of way	Philadelphia.
J. M. Henry.....	Gen. supt. motive power	Philadelphia.
C. I. Leiper.....	Gen. supt., New Jersey div.	New York.
Eliot Sumner.....	Supt. motive power, N. J. div.	New York.
P. L. Grove.....	Supt., New York div.	Jersey City.
L. K. Marr.....	Asst. supt., New York div.	Jersey City.
A. B. Clark.....	Supt., Trenton div.	Trenton, N.J.
H. C. Bixler.....	Supt., Manhattan div.	New York.
A. G. Mitchell.....	Supt., W. Jersey & Seashore	R. R. Camden, N.J.
G. LeBoutillier.....	Gen. supt., Eastern Penn. div.	Harrisburg.
C. B. Keiser.....	Supt. mot. power, E. Penn. div.	Harrisburg.
E. J. Cleave.....	Supt., Philadelphia div.	Harrisburg.
I. B. Sinclair.....	Asst. supt., Philadelphia div.	Harrisburg.
Wm Elmer.....	Supt., Middle div.	Altoona.
G. C. Koons.....	Asst. supt., Middle div.	Altoona.
J. K. Johnston.....	Supt., Tyrone div.	Tyrone, Pa.
A. B. Cuthbert.....	Supt., Cresson div.	Cresson, Pa.
F. P. Abercrombie.....	Supt., Juniata div.	Bedford, Pa.
Thos. B. Kennedy.....	Supt., Cumberland Valley div.	Chamb'r'sb'g, Pa.
Gamble Latrobe.....	Gen. supt., Southern div.	Wilm'ton, Del.
Amos Davis.....	Supt. motive power, South'n div.	Wilm'ton, Del.
James Buckelew.....	Supt., Maryland div.	Wilm'ton, Del.
W. L. Burt.....	Asst. supt., Maryland div.	Wilm'ton, Del.
G. R. Simnickson.....	Supt., Baltimore div.	Baltimore.
G. M. Smith.....	Supt., Delaware div.	Wilm'ton, Del.
R. H. Pinkham.....	Supt., N. Y., Phila. & Norf. R.R. CapeCh'les, Va.	
H. M. Carson.....	Gen. supt., Central Penna. div.	Will'msp't, Pa.
Robert Bennett.....	Supt. mot. power, Cent. Pa. div.	Will'msp't, Pa.
H. H. Russell.....	Supt., Williamsport div.	Will'msp't, Pa.
L. W. Allibone.....	Supt., Sunbury div.	Sunbury, Pa.
H. A. Jaggard.....	Supt., Elmira div.	Elmira, N.Y.
C. D. Young.....	Supt., Schuylkill div.	Reading, Pa.
A. M. Parker.....	Supt., Phila. terminal div.	Philadelphia.
J. M. Jones.....	Asst. supt., Phila. term. div.	Philadelphia.
J. L. Eysmans.....	Traffic manager	Philadelphia.
J. B. Large.....	Freight traffic manager	Philadelphia.
E. P. Bates.....	Asst. freight traffic manager	Philadelphia.
Guy S. McCabe.....	Gen. freight agent	Philadelphia.
R. R. Blydenburgh.....	Asst. gen. freight agent	Philadelphia.
Walter Thayer.....	Gen. coal freight agent	Philadelphia.
R. L. Franklin.....	Freight claim agent	Philadelphia.
J. H. Baer.....	Asst. freight claim agent	Philadelphia.
A. J. Ball.....	Foreign freight agent	Philadelphia.
D. N. Bell.....	Passenger traffic manager	Philadelphia.
O. T. Boyd.....	General passenger agent	Philadelphia.
R. J. DeLong.....	Asst. gen. pass. agent	Philadelphia.
E. Yungman.....	Asst. gen. pass. agent	Philadelphia.

W. F. McPhail	General baggage agent	Philadelphia
A. A. Brown	Asst. gen. baggage agent	Philadelphia
H. H. Baker	Supt. restaurant service	New York
M. S. Brooks	Asst. supt. restaurant serv.	New York
L. A. Lyons	Asst. supt. restaurant serv.	New York
Montgom. Smith	Purchasing agent	Philadelphia
H. A. Anderson	Asst. purchasing agent	Philadelphia
B. P. Philippe	Asst. purchasing agent	Philadelphia
D. T. Jones	Asst. to the purchasing agent	Philadelphia
J. P. Gauff	Real estate agent	Philadelphia
H. E. Tripler	Asst. real estate agent	Philadelphia
T. F. McClain	Asst. real estate agent	Philadelphia
I. A. Miller	Accountant	Philadelphia

CENTRAL REGION

Extending from Altoona on the east to Buffalo on the north and Columbus and Mansfield, Ohio, on the west.

Name	Title	Headquarters
R. L. O'Donnell	Vice-president	Pittsburgh
R. E. McCarty	General manager	Pittsburgh
N. W. Smith	Asst. general manager	Pittsburgh
J. B. Fisher	Gen. supt. of transportation	Pittsburgh
A. J. Dawson	Supt. of freight transportation	Pittsburgh
G. M. Sixsmith	Supt. of passenger trans.	Pittsburgh
R. K. Stackhouse	Supt. of stations and transfers	Pittsburgh
W. D. Wiggins	Chief engr., maintenance of way	Pittsburgh
H. H. Maxfield	Gen. supt. motive power	Pittsburgh
A. J. Whitney	Gen. supt., Northern div.	Buffalo
C. L. McIlvaine	Supt. motive power, Northern div.	Buffalo
G. B. Beale	Supt., Buffalo div.	Buffalo
J. J. Rhoads	Supt., Allegheny div.	Oil City, Pa.
E. B. John	Supt., Renovo div.	Erie, Pa.
J. H. Gumbes	Gen. supt., Western Penna. div.	Pittsburgh
J. L. Cunningham	Supt. motive power, W. Pa. div.	Pittsburgh
R. T. Morrow	Supt., Pittsburgh div.	Pittsburgh
W. L. Ekin	Supt., Conemaugh div.	Pittsburgh
A. W. McClellan	Supt., Monongahela div.	Uniontown, Pa.
J. C. McCullough	Gen. supt., Eastern Ohio div.	Pittsburgh
E. B. DeVilbiss	Supt. motive power, E. Ohio div.	Pittsburgh
F. G. Grimshaw	Supt., Eastern div.	Ft. Wayne, Ind.
E. B. Taylor, Jr.	Supt., Marietta div.	Marietta, O.
O. Schroll	Supt., Panhandle div.	Pittsburgh
A. L. Morgan	Supt., Wheeling term. div.	Wheeling
M. W. Clement	Gen. supt., Lake div.	Cleveland
W. Y. Cherry	Supt. motive power, Lake div.	Cleveland
H. E. Newcomet	Supt., Cleveland & Pittsburgh div.	Cleveland
Guy Scott	Supt., Akron div.	Akron
J. F. Patterson	Supt., Erie and Ashtabula div.	New Castle, Pa.
O. C. Schaad	Supt., Pittsburgh term. div.	Pittsburgh
Geo. D. Ogden	Traffic manager	Pittsburgh
J. J. Koch	Freight traffic manager	Pittsburgh
W. C. Glynn	Asst. freight traffic manager	Pittsburgh
V. C. Williams	General freight agent	Pittsburgh
R. E. Cook	Asst. gen. freight agent	Pittsburgh
J. C. Venning	General coal freight agent	Pittsburgh
H. C. Clevenger	Coal freight agent	Pittsburgh
U. G. Couffer	Freight claim agent	Pittsburgh
J. M. Chesbrough	Passenger traffic manager	Pittsburgh
F. W. Conner	General passenger agent	Pittsburgh
C. H. Mathews, Jr.	Asst. gen. passenger agent	Pittsburgh
C. S. Shoemaker	General baggage agent	Pittsburgh
W. G. Phelps	Purchasing agent	Pittsburgh
C. E. Walsh	Asst. purchasing agent	Pittsburgh
G. C. Urquhart	Real estate agent	Pittsburgh
W. B. Blake	Asst. real estate agent	Pittsburgh
W. P. deHart	Accountant	Pittsburgh

NORTHWESTERN REGION

Extending from Columbus and Mansfield, Ohio, inclusive, on the east to Chicago, Illinois, on the west.

Name	Title	Headquarters
J. D. Rodgers	Vice-president	Chicago
T. B. Hamilton	General manager	Chicago
J. W. Roberts	Gen. supt. of transportation	Chicago
C. L. Hamilton	Supt. of passenger trans.	Chicago
T. J. Skillman	Chief engr., maintenance of way	Chicago
T. W. Demarest	Gen. supt. motive power	Chicago
W. B. Wood	Gen. supt., Illinois div.	Chicago
O. C. Wright	Supt. motive power, Ill. div.	Ft. Wayne, Ind.
W. H. Scriven	Gen. agt. & supt., Chic. term. div.	Chicago
B. H. Hudson	Supt., Fort Wayne div.	Ft. Wayne, Ind.
C. B. Reynolds	Supt., Logansport div.	L'g'nsp't, Ind.
J. B. Hutchinson, Jr.	Gen. supt., Northern Ohio div.	Toledo, O.
O. P. Reese	Supt. motive power, N. Ohio div.	Toledo, O.
Paul Jones	Supt., Toledo div.	Toledo, O.
T. A. Roberts	Supt., Mansfield div.	Mansfield, O.
W. M. Wardrop	Gen. supt., Michigan div.	G. Rapids, Mich.
G. R. Barry	Supt., Grand Rapids div.	Ft. Wayne, Ind.

R. E. Casey	Supt., Mackinaw div.	G. Rapids, Mich.
Wm. Hodgdon	Traffic manager	Chicago
J. E. Weller	Freight traffic manager	Chicago
M. S. Connelly	Asst. freight traffic manager	Chicago
W. H. Johnson	General freight agent	Chicago
J. T. Johnston	Asst. general freight agent	Chicago
R. W. Cooke	Freight claim agent	Chicago
Geo. W. Smith	Foreign freight agent	Chicago
J. P. Anderson	Passenger traffic manager	Chicago
A. H. Shaw	General passenger agent	Chicago
W. R. MacFarland	Asst. gen. passenger agent	Chicago
R. B. Jones	General baggage agent	Chicago
C. E. Milliron	Supt. restaurant service	Columbus, O.
D. Irving	Asst. supt. restaurant service	Columbus, O.
I. B. Thomas	Purchasing agent	Chicago
Henry Sullivan	Asst. purchasing agent	Chicago
S. G. Cramp	Real estate agent	Chicago
B. F. Brandon	Accountant	Chicago

SOUTHWESTERN REGION

Extending from Columbus and Cincinnati to St. Louis.

Name	Title	Headquarters
Benj. McKeen	Vice-president	St. Louis
I. W. Geer	General manager	St. Louis
F. J. Kron	Gen. supt. of transportation	St. Louis
J. D. Fitzgerald	Supt. of passenger trans.	St. Louis
F. J. Stimson	Chief engr., maintenance of way	St. Louis
W. C. A. Henry	Gen. supt. motive power	St. Louis
W. C. Downing	Gen. supt., Indiana div.	Indianapolis
J. E. Mechling	Supt. motive power, Indiana div.	Indianapolis
F. H. Worthington	Supt., St. Louis div.	Terre Haute
R. D. McKeon	Supt., Peoria div.	Decatur, Ill.
D. Y. Geddes	Supt., South Bend div.	L'g'nsp't, Ind.
J. W. Coneys	Supt., Indianapolis div.	Indianapolis
Taber Hamilton	Supt., Louisville div.	Louisville
R. K. Rochester	Gen. supt., Central Ohio div.	Columbus, O.
G. B. Fravel	Supt. mot. power, Cent. Ohio div.	Columbus, O.
P. W. Sullivan	Supt., Columbus div.	Columbus, O.
R. C. Barnard	Supt., Cincinnati div.	Cincinnati, O.
A. C. Watson	Supt., Richmond div.	Richm'd, Ind.
C. L. Hamilton	Supt., Zanesville div.	Zanesville, O.
C. B. Sudborough	Traffic manager	St. Louis
J. D. Couffer	Freight traffic manager	St. Louis
S. C. Matthews	Asst. freight traffic manager	St. Louis
P. C. Sprague	General freight agent	St. Louis
B. H. Dally	Asst. gen. freight agent	St. Louis
A. C. Hickox	Freight claim agent	St. Louis
W. T. Midlam	Foreign freight agent	St. Louis
W. W. Richardson	Passenger traffic manager	St. Louis
F. A. Bauchens	General passenger agent	St. Louis
J. C. Millspaugh	Asst. gen. passenger agent	St. Louis
W. Q. Ingamells	General baggage agent	St. Louis
C. R. Peddle	Purchasing agent	St. Louis
W. W. Mayer	Real estate agent	St. Louis
S. W. Troutman	Accountant	St. Louis

TRAFFIC DEPARTMENT

Under the supervision of Geo. D. Dixon, vice-president in charge of traffic.

System Officers

Name	Title	Headquarters
R. C. Wright	General traffic manager	Philadelphia
A. M. Schoyer	*Manager of through frt traffic	Philadelphia
C. M. Shearer	*Express traffic agent	Philadelphia
V. J. Bradley	*Chief of mail service and traffic	Philadelphia
S. C. Scott	*Asst. express and mail traf. agt.	Pittsburgh
R. L. Spencer	*Warehouse supt.	Pittsburgh

*Joint officers of transportation and traffic departments.

For regional officers see above.

FINANCIAL DEPARTMENT

Under the supervision of Henry Tatnall, vice-president in charge of finance.

System Officers

Name	Title	Headquarters
Jas. F. Fahnestock	Treasurer	Philadelphia
H. P. Conner	Asst. treasurer	Philadelphia
Geo. A. Walker	Asst. treasurer	Philadelphia
John M. Wood	Asst. treasurer	Philadelphia
J. W. Marshall	Asst. treasurer	New York
H. H. Lee	Asst. treasurer	Philadelphia
J. S. Vanzandt	Asst. to the treasurer	Philadelphia
J. C. Rogers	Chief paymaster	Philadelphia
E. B. Broadway	Cashier	Philadelphia
H. C. Lawser	Asst. cashier	Philadelphia
Charles Riddle	Asst. cashier	Philadelphia
G. R. Worrell	Asst. cashier	Philadelphia

G. B. Robinson....Registrar of bonds.....	Philadelphia.
L. C. Talcott....Asst. registrar of bonds.....	Philadelphia.
A. P. Thruelsen....Registrar of bonds.....	New York.
John A. Barry....Asst. registrar of bonds.....	New York.
T. H. B. McKnight. Treasurer	Pittsburgh.
R. R. Reed.....Asst. treasurer	Pittsburgh.
R. W. Morrison....Asst. treasurer	Pittsburgh.
R. B. Thompson....Asst. treasurer	Pittsburgh.
C. P. Davidson....Asst. treasurer	Pittsburgh.
H. F. Scheiman....Asst. treasurer	Pittsburgh.
C. C. Blair.....Asst. to the treasurer.....	Pittsburgh.
F. E. Jackson....Asst. to the treasurer.....	Pittsburgh.
C. S. Lillie.....Cashier	Pittsburgh.
J. H. Fults.....Asst. cashier.....	Pittsburgh.

ACCOUNTING DEPARTMENT

Under the supervision of A. J. County, vice-president in charge of accounting.

System Officers

Name	Title	Headquarters
E. A. Stockton....Controller	Philadelphia.	
J. W. Orr.....Controller	Pittsburgh.	
J. S. Donaldson....Asst. controller.....	Philadelphia.	
F. J. Fell, Jr.....Asst. controller.....	Philadelphia.	
John Hurst.....Asst. controller.....	Pittsburgh.	
J. B. Brittain....Asst. controller.....	Pittsburgh.	
J. N. Lyon.....Asst. to the controller.....	Pittsburgh.	
Geo. B. Rudduck. General accountant.....	Philadelphia.	
W. B. Kraft....Auditor of revenues.....	Philadelphia.	
W. L. Markley....Asst. auditor of revenues.....	Philadelphia.	
H. J. Walker....Auditor of expenditures.....	Pittsburgh.	
W. M. Kennedy....Asst. auditor of expenditures....	Pittsburgh.	
J. E. Merion.....Auditor of through freight traffic.....	Philadelphia.	
F. N. McIntyre....Asst. auditor of through frt traf.....	Philadelphia.	
W. J. Bingham....Auditor of through pass. traf.....	Philadelphia.	
C. E. Ward.....Asst. aud. of through pass. traf..	Philadelphia.	
J. B. Moffitt.....Auditor of local freight traffic....	Philadelphia.	
E. T. Halter.....Asst. auditor of local freight traf.	Philadelphia.	
F. E. Atkins.....Auditor of local pass traffic.....	Philadelphia.	
H. W. Siegrist....Asst. auditor of local pass. traffic.	Philadelphia.	
A. S. Porter....Auditor of disbursements.....	Philadelphia.	
U. G. Rowley....Asst. auditor of disbursements....	Philadelphia.	
F. E. Shallenberger. Auditor of local freight traffic....	Pittsburgh.	
R. S. Westerman..Asst. auditor of local frt. traffic..	Pittsburgh.	
C. S. Covert.....Auditor of local passenger traffic.	Pittsburgh.	
H. M. Longworthy. Asst. auditor of local pass. traffic.	Pittsburgh.	
J. J. Lyons.....Auditor of disbursements.....	Pittsburgh.	
J. M. Methane....Asst. auditor of disbursements...Pittsburgh.	Pittsburgh.	

For regional officers see above.

PURCHASING DEPARTMENT

Under the supervision of M. C. Kennedy, vice-president in charge of purchases.

System Officers

Name	Title	Headquarters
Samuel Porcher....General purchasing agent.....	Philadelphia.	

For regional officers see above.

REAL ESTATE DEPARTMENT

Under the supervision of M. C. Kennedy, vice-president in charge of real estate.

Name	Title	Headquarters
T. W. Hulme....General real estate agent.....	Philadelphia.	

For regional officers see above.

LEGAL DEPARTMENT

Under the supervision of the president.

System Officers

Name	Title	Headquarters
F. I. Gowen....General counsel.....	Philadelphia.	
Alan H. Strong....General solicitor.....	Philadelphia.	
H. S. P. Nichols....Asst. general counsel.....	Philadelphia.	
Stacy B. Lloyd....Asst. general counsel.....	Philadelphia.	
H. W. Biklé.....Asst. general counsel.....	Philadelphia.	
G. R. Allen.....Asst. general solicitor.....	Philadelphia.	
Edwin A. Lucas....Asst. solicitor.....	Philadelphia.	
Adams Dodson....Asst. solicitor.....	Philadelphia.	
Harry Z. Maxwell....Asst. solicitor.....	Philadelphia.	
J. C. Rose.....Chief claim agent.....	Philadelphia.	
C. B. Heiserman....General counsel.....	Pittsburgh.	
E. H. Seneff....General solicitor.....	Pittsburgh.	
James Stillwell....Asst. general solicitor.....	Pittsburgh.	
Guernsey Orcutt....Asst. general solicitor.....	Pittsburgh.	
E. L. Covert....Chief claim agent.....	Pittsburgh.	
G. A. Boone....Special solicitor.....	Pittsburgh.	

INSURANCE DEPARTMENT

Under the supervision of M. C. Kennedy, vice-president in charge of insurance.

System Officers

Name	Title	Headquarters
R. H. Newbern....Superintendent	Philadelphia.	
F. A. Greene....Asst. superintendent.....	Philadelphia.	
W. H. Sechrist....Asst. superintendent.....	Philadelphia.	
W. C. Neely.....Asst. to the superintendent.....	Philadelphia.	

EMPLOYEE'S SAVING FUND

Under the supervision of Henry Tatnall, vice-president in charge of finance.

Name	Title	Headquarters
Lewis Neilson....Superintendent	Philadelphia.	
J. L. Mason....Superintendent	Pittsburgh.	

RELIEF AND PENSION DEPARTMENTS

Under the supervision of G. L. Peck, vice-president in charge of personnel.

Name	Title	Headquarters
E. B. Hunt.....Supt. rlef. dept. & agt. pens. dept.	Philadelphia.	

Obituary

Louis P. Ecker, federal auditor of the Toledo & Ohio Central, died recently at his home in Columbus, Ohio.

Robert E. Ryan, assistant federal treasurer of the Louisville & Nashville, with headquarters at Louisville, Ky., died at his home in Louisville, February 17.

Walter Shepard, formerly consulting engineer of the Boston & Albany, with headquarters at Boston, Mass., died recently at his home at Dorchester, Mass.

Charles Lewers, a member of the legal staff of the Southern Pacific Railroad Company, with headquarters at San Francisco, Cal., died recently at his home in that city at the age of 46 years.

Le Grand Cannon, vice-president and general manager of the Nevada Northern, notice of whose death appeared in the *Railway Age* of February 13 (page 516), was born at Logansport, Ind., on April 16, 1847. He entered railway service in 1864 as a bill clerk and operator on the Chicago, Milwaukee & St. Paul. In 1865 he became connected with the Wabash in a similar position and, after a year's service on that road, entered the employ of the Indianapolis, Peru & Chicago, serving successfully as chief clerk in the general freight agent's office, paymaster, secretary, treasurer, and general passenger agent. From December, 1881, to November, 1882, he was general freight and passenger agent of the Chicago, Texas & Mexican. In 1883, he was appointed traveling auditor of the Denver & Rio Grande and the same year was also appointed auditor of the Transcontinental Association. In January, 1885, he was appointed general agent and later auditor of the Southwestern Passenger Association, continuing in this position until August, 1887, when he became assistant to the general manager of the Oregon Pacific. In May, 1889, he was appointed general agent and receiver for the Chicago & Atlantic, in which position he continued until May, 1895, when he was appointed general agent and receiver for the Colorado Midland. In October, 1898, he was appointed assistant to the president of the Colorado Midland, remaining in that position until May, 1901, when he resigned to become assistant traffic manager and assistant to the president of the American Smelting & Refining Company. In January, 1907, he was elected vice-president and general manager of the Nevada Northern, in which capacity he served until his death.

AUSTRALIAN STEEL WORKS PLANNED.—The establishment is proposed of a large steel works at West Guildford, Western Australia, by the Australian Steel Company, Limited, which has already made arrangements with the state government to supply electric power, and with the State Railways Department to furnish scrap material.